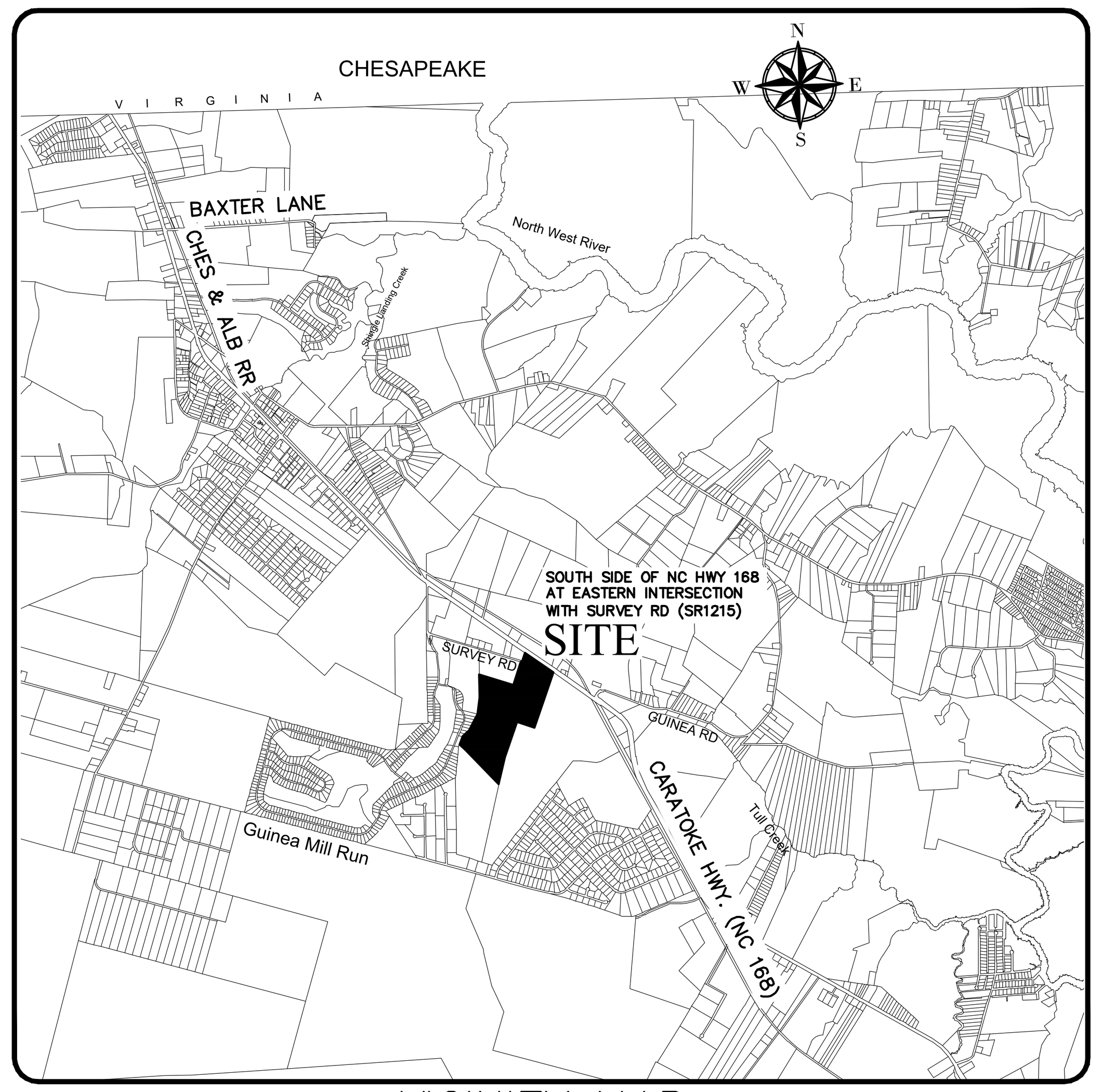


VICINITY MAP

SCALE: 1" = 5000'

CONSTRUCTION DRAWINGS FOR

FLORA FARM

A MIXED RESIDENTIAL SUBDIVISION

PHASES 1 - 2

MOYOCK TOWNSHIP CURRITUCK COUNTY NORTH CAROLINA

GENERAL NOTES:

1. PROJECT NAME: FLORA FARM – PHASES 1–2
2. OWNER/APPLICANT: NORTH–SOUTH DEVELOPMENT GROUP, LLC
   417–D CARATOKE HIGHWAY
   MOYOCK, NC 27958
3. PROPERTY DATA:
   ADDRESS: 320 SURVEY ROAD, MOYOCK, NC 27958
   PIN: 0015–000–085E–0000
   RECORD DOCUMENTS: PC: R, PG: 182; DB: 1666, PG: 285
   PROPERTY ZONING: C–MXR (CONDITIONAL – MIXED RESIDENTIAL)
4. F.I.R.M. DATA:
   ZONE X PER F.I.R.M. MAP NOS. 3721803100 K & 3721803000 K, BOTHL HAVING AN EFFECTIVE DATE DECEMBER 21, 2018. USE OF LAND WITHIN A FLOODWAY OR FLOOD PLAIN IS SUBSTANTIALLY RESTRICTED BY CHAPTER 7 OF THE CURRITUCK COUNTY UNIFIED DEVELOPMENT ORDINANCE.
5. THIS PROPERTY CONTAINS ACOE "404' JURISDICTIONAL WETLANDS AS SHOWN AND CONFIRMED BY USACOE ACTION ID# SAW 2019–00618 & 2019–00619, DATED 3/8/2019, AND MAY REQUIRE U.S. CORP OF ENGINEERS APPROVAL PRIOR TO DEVELOPMENT OF THE PROPERTY.
6. SECTION 7.6.5 OF THE CURRITUCK U.D.O. SUBSTANTIALLY RESTRICTS DEVELOPMENT WITHIN A 30' RIPARIAN BUFFER TO CETAIN WETLANDS.
7. EXISTING CONDITION INFORMATION BASED ON A COMBINATION OF THE FOLLOWING:
   - 2020 AERIAL IMAGERY OBTAINED FROM NCONEMAP.COM
   - FIELD TOPOGRAPHIC SURVEY DATA BY BISSELL PROFESSIONAL GROUP.
   - ELEVATIONS ARE REFERENCED TO NAVD 1988 VERTICAL DATUM.
8. ALL UTILITIES ARE TO BE UNDERGROUND.
9. A 10' EASEMENT FOR UTILITIES AND DRAINAGE ALONG REAR AND SIDE PROPERTY LINES AND A 15' EASEMENT FOR UTILITIES AND DRAINAGE ALONG FRONT PROPERTY LINE SHALL BE ESTABLISHED. PEDESTRIAN ACCESS AND STREET TREE EASEMENTS SHALL BE ESTABLISHED.
10. A 25' DRAINAGE EASEMENT SHALL BE ESTABLISHED ALONG ALL MAJOR DRAINAGE WAYS SERVING MORE THAN 5 ACRES. A BLANKET DRAINAGE, UTILITY, AND PEDESTRIAN ACCESS EASEMENT IS HEREBY ESTABLISHED ACROSS ALL OPEN SPACE AREAS. A 25' DRAINAGE EASEMENT SHALL BE ESTABLISHED ALONG ROWLAND CREEK CANAL ALL DRAINAGE EASEMENTS SHALL BE DEDICATED TO CURRITUCK COUNTY.
11. NEAREST HYDRANT (MCH15) FLOW TESTED AT 1,146 GPM. DESIGN FIRE FLOW IS 1,000 GPM FOR SINGLE FAMILY RESIDENCES BASED ON STRUCTURES HAVING LESS THAN 4,800 SQ. FT. AND NOT OVER 2–STORIES HIGH. NFF FOR MULTI–FAMILY STRUCTURES IS BASED ON ISO STANDARDS.

DEVELOPMENT NOTES:

1. PROPERTY SUMMARY:

PROPERTY AREA NORTH OF SURVEY RD;	2.58 AC.
PROPERTY AREA SOUTH OF SURVEY RD:	221.59 AC.
SURVEY RD. R/W AREA:	1.87 AC.
TOTAL PROPERTY AREA:	226.04 AC.
PROPERTY AREA NOT A PART:	100.23 AC.
TOTAL PROJECT AREA:	125.81 AC.

2. DEVELOPMENT SUMMARY: (PHASES 1–2)

# OF PROPOSED RESIDENTIAL LOTS:	131
PROPOSED RIGHT–OF–WAY WIDTHS:	40' TYPICAL
PROPOSED PAVED ROADWAY WIDTH:	27' TYPICAL
LINEAR FEET OF SUBDIVISION ROADWAY:	21,000 L.F.±

3. IMPERVIOUS COVERAGE SUMMARY: (PHASES 1–2)

RESIDENTIAL LOT COVERAGE:	14.22 AC.
COMMERCIAL LOT COVERAGE:	1.96 AC.
ROADWAY COVERAGE:	7.76 AC.
PARKING COVERAGE:	0.56 AC.
TEMP. GRAVEL PARKING COVERAGE:	0.45 AC.
SIDEWALK COVERAGE:	2.93 AC.
MISC. AMENITY COVERAGE ALLOWANCE:	0.33 AC.
TOTAL COVERAGE:	28.21 AC.

4. TOTAL DISTURBED AREA: 107 AC
   THIS PLAN IS A MODIFICATION TO A PREVIOUS APPROVED PLAN THAT PROPOSED 98 ACRES OF DISTURBANCE. AN ADDITIONAL 9 ACRES IS ASSOCIATED WITH THIS MODIFICATION.

ZONING CONDITIONS:

CONDITION 1 – DRAINAGE IMPROVEMENTS:
DRAINAGE IMPROVEMENTS WILL BE PROVIDED AS FOLLOWS:
a. EXTEND THE ROWLAND CREEK DRAINAGE IMPROVEMENTS TO THE EAGLE CREEK PUMPSTATION, WITH AGREEMENT FROM EAGLE CREEK.
b. MAKE IMPROVEMENT TO THE DRAINAGE DITCH THAT RUNS ALONG THE COMMON BOUNDARY BETWEEN THE FAST/BRUMSEY PROPERTY AND EAGLE CREEK/RANCHLAND BASED ON RESULTS OF THE STORMWATER MODELING OF EXISTING CONDITIONS.
c. PERFORM STORMWATER MODELING OF THE PROPOSED FLORA FARM DEVELOPMENT TO MANAGE THE 100 YEAR STORM EVENT AN PROVIDE STORMWATER STORAGE, INCLUDING BERMS AS NECESSARY.

CONDITION 2 – PHASING:
a. DEVELOPMENT WILL BE RECORDED IN 5 PHASES. DEVELOPER WILL NOT RECORD THE FIRST PHASE BEFORE JUNE 1, 2022.
b. THE FIRST PHASE WILL NOT CONTAIN MORE THAN 55 LOTS.
c. SUBSEQUENT PHASES WILL NOT BE RECORDED SOONER THAN 6 MONTHS FOLLOWING THE PRIOR PHASE, AND IN ANY EVENT, NO SOONER THAN JANUARY 1, 2023.
d. DEVELOPER WILL RETAIN THE RIGHT TO PROVIDE AN ANNUAL UPATE OF PHASING, INCLUDING MAKING ADJUSTMENTS TO PHASE LINES AND THE SEQUENCE OF RECORDING, AS LONG AS THE TIMING OF TOTAL LOTS RECORDED IN THE ABOVE CONDITIONS IS FOLLOWED.

CONDITION 3 – PRIVATE WASTEWATER TREATMENT PLANT (WWTP):
a. CERTIFICATION BE PROVIDED THAT THE PRIVATE WWTP PROPOSED TO SERVICE THIS DEVELOPMENT CAN ACCOMMODATE THE GALLONS PER DAY (GPD) OF WASTEWATER THIS DEVELOPMENT PROPOSES TO GENERATE.

THE FOLLOWING PERMITS ARE REQUIRED PRIOR TO PROJECT CONSTRUCTION:

PERMIT	AGENCY	REFERENCE NUMBER	DATE
SEDIMENTATION AND EROSION CONTROL PERMIT	N.C.D.E.Q. – DIVISION OF LAND RESOURCES	CURRI–2022–018	5/16/2024
STORMWATER MANAGEMENT PERMIT	N.C.D.E.Q – DIVISION OF LAND RESOURCES	SW7220504 MOD	8/29/2024
WATERLINE EXTENSION AUTHORIZATION TO CONSTRUCT	N.C.D.E.Q – PUBLIC WATER SUPPLY	22–01013	12/2/2022
ENCROACHMENT AGREEMENT – WATER MAIN	N.C.D.O.T.	E011–027–24–00305	
ENCROACHMENT AGREEMENT – FORCE MAIN	N.C.D.O.T.	E011–027–24–00314	9/6/2024
ENCROACHMENT AGREEMENT – ROUNDABOUT	N.C.D.O.T.	E011–027–24–00292	
DRIVEWAY PERMIT	N.C.D.O.T.	D011–027–24–00066	
MINOR CROSSING PERMIT (NWP 14)	U.S.A.C.O.E.	2019–00618	12/1/2022
WASTEWATER COLLECTION SYSTEM PERMIT	N.C.D.E.Q – DIVISION OF WATER RESOURCES	WQ0043948	11/30/2022
CURRITUCK COUNTY PRELIMINARY PLAT & USE PERMIT	CURRITUCK COUNTY BOARD OF COMMISSIONERS	PB21–25	1/3/2022
CURRITUCK COUNTY CONSTRUCTION AUTHORIZATION	CURRITUCK COUNTY PLANNING STAFF	–	

STORMWATER CERTIFICATE

I,____________________, OWNER/AGENT HEREBY CERTIFY THE INFORMATION INCLUDED ON THIS AND ATTACHED PAGES IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

ON THE PLAN ENTITLED, FLORA FARM PHASES 1 – 2 CONSTRUCTION DRAWINGS – GRADING, DRAINAGE AND STORMWATER MANAGEMENT PLAN, STORMWATER DRAINAGE IMPROVEMENTS SHALL BE INSTALLED ACCORDING TO THESE PLANS AND SPECIFICATIONS AND APPROVED BY CURRITUCK COUNTY. YEARLY INSPECTIONS ARE REQUIRED AS PART OF THE STORMWATER PLAN. THE OWNER IS RESPONSIBLE FOR ALL MAINTENANCE REQUIRED. CURRITUCK COUNTY ASSUMES NO RESPONSIBILITY FOR THE DESIGN, MAINTENANCE, OR PERFORMANCE OF THE STORMWATER IMPROVEMENTS.

________ DATE ________________ OWNER/AGENT

North Carolina One-Call Center Inc.
811
Know what's below Call before you dig.

SURVEY LEGEND

SCM	SET CONCRETE MONUMENT
ECM	EXISTING CONCRETE MONUMENT
SIR	SET IRON ROD
EIR	EXISTING IRON ROD
EIP	EXISTING IRON PIPE
CP	CALCULATED POINT
M.B.L.	MAXIMUM BUILDING LIMIT
N.T.S.	NOT TO SCALE
P.C.	PLAT CABINET
D.B.	DEED BOOK
SL	SLIDE
SF	SQUARE FEET
AC	ACRES

PLAN LEGEND

- ROADWAY CENTERLINE
- RIGHT–OF–WAY
- PROPERTY BOUNDARY
- ADJOINING PROPERTY LINE
- EXISTING DITCH CENTERLINE
- EXISTING DITCH TOP OF BANK
- PROPOSED SWALE W/ FLOW ARROW
- PROPOSED SWALE HIGH POINT
- EXISTING DITCH TO BE FILLED
- FEMA BOUNDARY LINE (FEMA)
- EXISTING GRADE CONTOUR
- PROPOSED GRADE CONTOUR
- EXISTING SPOT GRADE (X 0.00)
- PROPOSED SPOT GRADE (•0.00)
- EXISTING CULVERT
- PROPOSED CULVERT
- PROPOSED DRAINAGE STRUCTURE (D)
- EXISTING WATER LINE (EWL)
- PROPOSED WATER LINE (SIZE AS NOTED) (WL)
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED WATER SERVICE
- PROPOSED VALVE
- PROPOSED BLOW–OFF ASSEMBLY
- PROPOSED REDUCER
- PROPOSED SEWER FORCE MAIN (FM)
- PROPOSED SEWER COLLECTION MAIN
- PROPOSED SEWER MANHOLE (S)
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED SILT FENCE
- PROPOSED INLET PROTECTION (D)
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED TEMPORARY CHECK DAM

PROFILE LEGEND

- EXISTING GRADE @ ROAD C/L
- PROPOSED GRADE @ ROAD C/L
- PROPOSED WATER LINE (SIZE AS NOTED) (WL)
- PROPOSED HYDRANT ASSEMBLY
- PROPOSED GATE VALVE
- PROPOSED REDUCER

SOILS LEGEND

— — —	SOILS LINE
Ca	CAPE FEAR LOAM
Ro	ROANOKE FINE SANDY LOAM
Ws	WASDA MUCK

NOTE:
EXISTING SITE INFORMATION DESCRIBED HEREON IS BELIEVED TO BE ACCURATE, HOWEVER, BPG INC. MAKES NO WARRANTY AS TO THE ACCURACY. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THIS INFORMATION BEFORE RELYING ON IT. THE CONTENT OF THESE DOCUMENTS MAY ALSO INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. IF SUCH CONDITIONS EXIST, THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER PRIOR TO PROCEEDING WITH THE SCHEDULED WORK AND MAY CONTINUE AFTER AN AUTHORIZATION TO PROCEED HAS BEEN GRANTED.

BISSELL PROFESSIONAL GROUP
Bissell Professional Group
Firm License # C–956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261–3266
FAX (252) 261–1760
Engineers, Planners, Surveyors and Environmental Specialists

COVER SHEET, DEVELOPMENT NOTES & SITE LOCATION

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7–9–24	DEVELOPMENT CALCS/PERMIT TBL	DMK
2	9–20–24	PERMIT TABLE	DMK

PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 1 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

S:\projects\4680 Flora Tract (Fost II)\dwg\Construction Drawings\468000B1.dwg 9/26/2024 Plotted: 9/26/2024 10:53 AM DWF6 ePlot.pc3

NORTH

P.C., SL

NOW OR FORMERLY
KEVIN MAYS
D.B. 61, PG. 359

NOW OR FORMERLY
FLORA, R.B. HEIRS
C/O MAYS, PHYLLIS
D.B. 1266, PG. 153

NOW OR FORMERLY
JAMES & LINDA CAMPBELL
D.B. 1710, PG. 358
P.C. J, PG. 116

NOW OR FORMERLY
FLORA, R.B. HEIRS
C/O MAYS, PHYLLIS
D.B. 1266, PG. 153

NOW OR FORMERLY
FLORA, R.B. HEIRS
C/O MAYS, PHYLLIS
D.B. 1266, PG. 153

NOW OR FORMERLY
JERRY SPENCE
D.B. 03, PG. E/00

NOW OR FORMERLY
SHANNON & DONALD
COOPER
D.B. 239, PG. 764

NOW OR FORMERLY
MARK E. THOMAS
P.C. I, SL. 291
D.B. 1323, PG. 226

NOW OR FORMERLY
WRIGHTS NC
INVESTMENTS LLC
P.C. I, SL. 291
D.B. 1404, PG. 422

CHESAPEAKE & ALBEMARLE RAILROAD

U.S. 168 - CARATOKE HWY.

SR 1215 - SURVEY ROAD

EX. 8" WATER MAIN

EX. 12" WATER MAIN

36" RCP
INV. 2.55'

36" RCP
INV. 2.06'

36" CMP
INV. 1.95'

18" CPP
INV. 2.42'

18" CPP
INV. 2.90'

36" CMP
INV. 1.55'

18" STEEL
INV. 5.39'

18" STEEL
INV. 5.59'

15" RCP
INV. 5.01'

15" RCP
INV. 4.88'

12" CPP
INV. 5.65'

12" CPP
INV. 5.53'

24" CMP
INV. 3.56'

24" CMP
INV. 3.12'

15" RCP
INV. 5.40'

15" RCP
INV. 5.38'

15" CMP
INV. 5.24'

15" CMP
INV. 5.06'

18" RCP
INV. 3.45'

18" RCP
INV. 2.34'

48" CMP
ONV. 0.48'

48" CMP
INV. 0.97'

48" RCP
INV. 1.99'

48" RCP
INV. 1.72'

NOW OR FORMERLY
MOYOCK DEVELOPMENT, LLC
P.C. 5, SL. 30
D.B. 1524, PG. 456

FOST BLVD.

LYDIA ST.

CLIFTON ST.

MIKE ST. W.

O'CONNER ST.

MOLLIE ST.

SANDRA RD.

EUNICE ST.

NOW OR FORMERLY
NORTH-SOUTH
DEVELOPMENT GROUP LLC
D.B. 1666, PG. 285
P.C. R, SL. 75

15" RCP
INV. 3.12'

15" RCP
INV. 3.89'

15" RCP
INV. 3.56'

15" RCP
INV. 3.45'

15" RCP
INV. 2.86'

15" RCP
INV. 3.19'

12" CPP
INV. 3.95'

12" CPP
INV. 3.80'

SAN. CLEANOUT
(TYP.)

NOW OR FORMERLY
CURRITUCK COUNTY
BOARD OF EDUCATION
D.B. 510, PG. 697

15" CPP
INV. 5.40'

NOW OR FORMERLY
MOYOCK DEVELOPMENT, LLC
P.C. R, SL. 30
D.B. 1524, PG. 456

Ro

Ca

To

EXISTING FARM DITCH FILL NOTE:

EXISTING FARM DITCHES NOTED AS BEING FILLED SHALL BE DEMUCKED AND BACKFILLED WITH CLEAN, COMPACTED SELECT MATERIAL. DITCH FILLING SHALL COINCIDE WITH DRAINAGE PATTERNS AND EROSION CONTROL MEASURES AS PROVIDED IN THESE PLANS.

100 0 50 100 200 400

1" = 100'

GRAPHIC SCALE

S:\projects\4680 Flora Tract (Fost II)\Civil\Construction Drawings\4680008.dwg 9/26/2024 Plotted: 9/26/2024 10:53 AM DMK ePlot.pc3

Bissell Professional Group
Bissell Professional Group
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
PHONE (252) 261-3300
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors
and Environmental Specialists

EXISTING FEATURES &
PROPOSED DEMOLITION PLAN

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK NORTH CAROLINA
CURRITUCK COUNTY

CONSTRUCTION DRAWINGS

REVISIONS			
NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

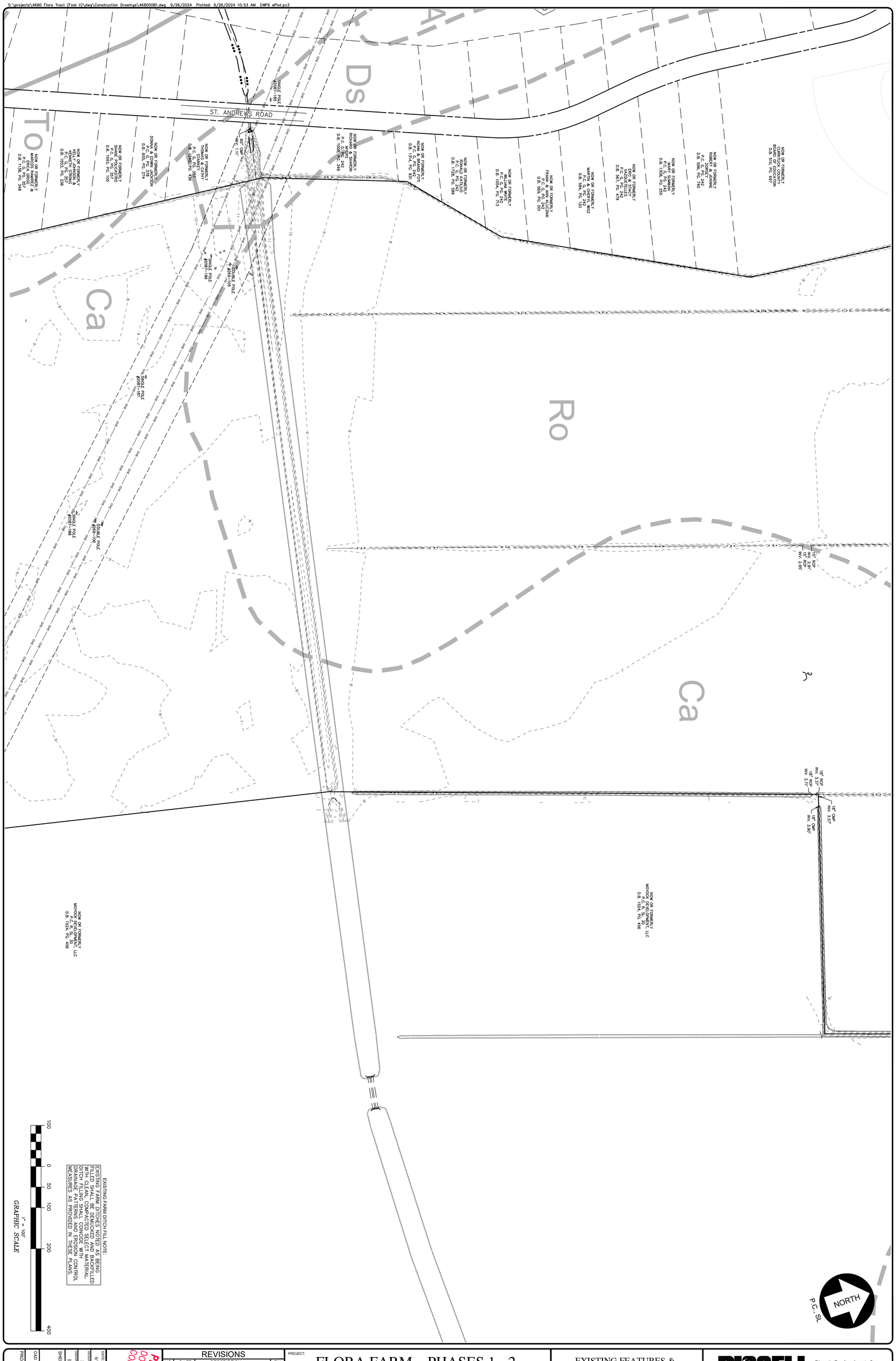
DATE: 4/10/24	SCALE: 1"=100'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 2 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

S:\projects\4680 Flora Trail (Fast II)\dwg\Construction Drawings\46800081.dwg 9/26/2024 Plotted: 9/26/2024 10:53 AM DWF6 ePlot.pc3



PROJECT NO.	4680
CAD FILE	46800081
SHEET:	3 OF 49
DRAWN	DMK
CHECKED	BPG
APPROVED	MSB
DATE	9/26/24
SCALE	1" = 100'

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION	BY

PROJECT:

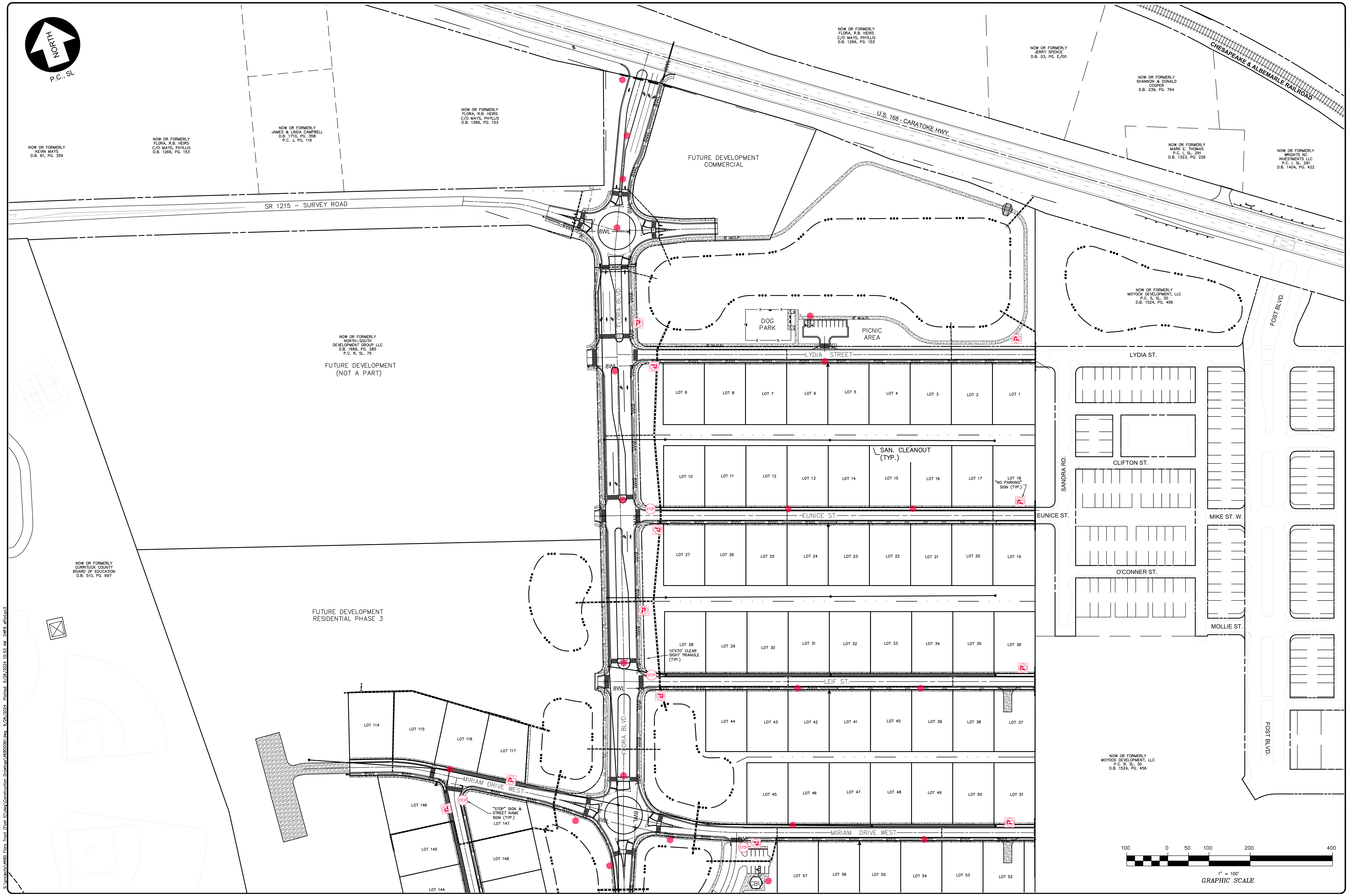
FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

EXISTING FEATURES & PROPOSED DEMOLITION PLAN

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists
Bissell Professional Group
Firm License # C-956
3012 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760



Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP

Engineers, Planners, Surveyors and Environmental Specialists

DEVELOPMENT OVERVIEW PLAN

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

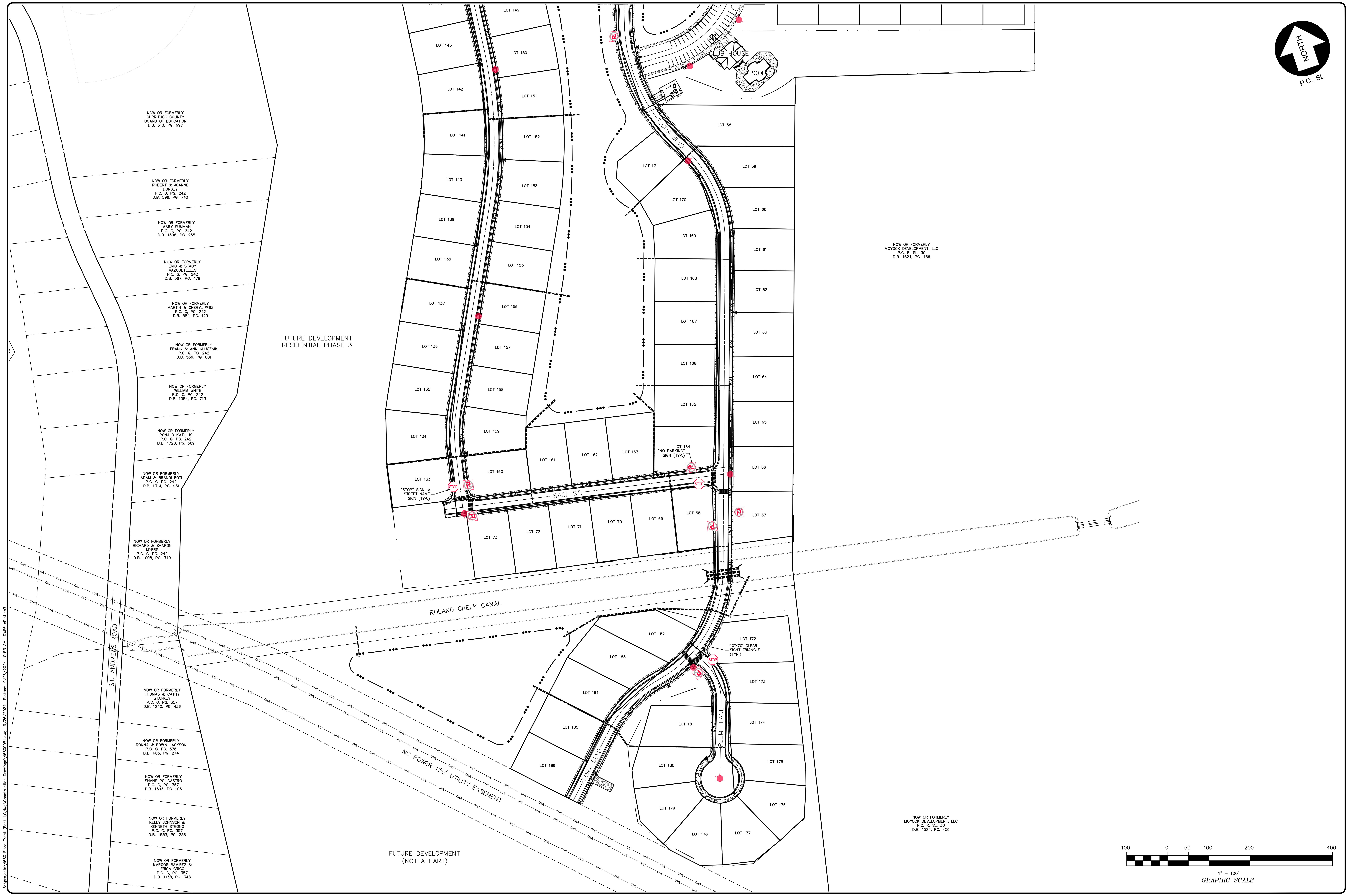
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=100'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 4 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680



Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

DEVELOPMENT OVERVIEW PLAN

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

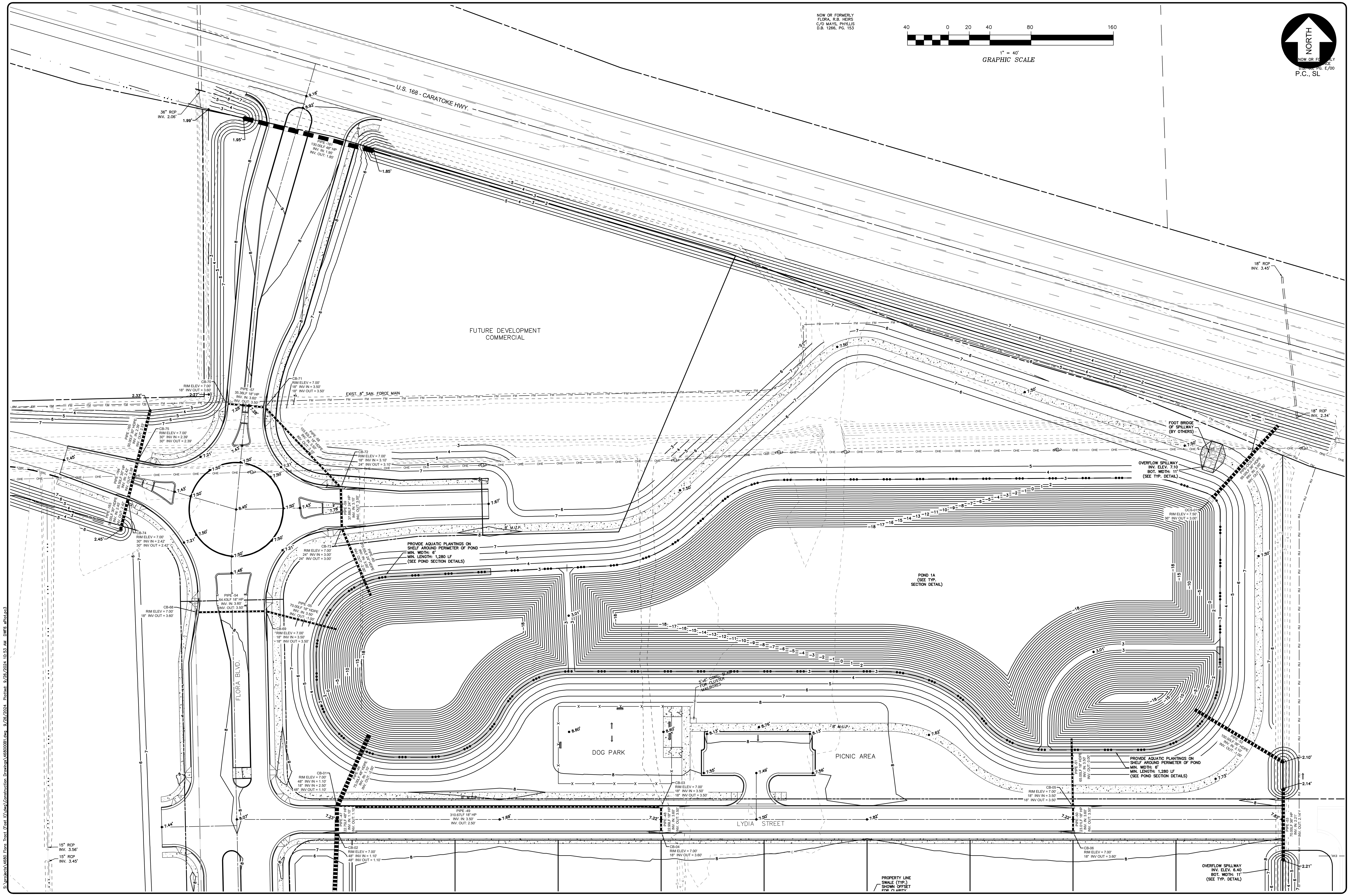
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=100'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 5 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680



FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

GRADING & DRAINAGE PLAN

THIS DOCUMENT IS THE SOLE PROPERTY OF BPG, INC. OF KITTY HAWK, NORTH CAROLINA. THE REPRODUCTION, IN WHOLE OR PART, OR THE MODIFICATION OF ANY DETAIL OR DESIGN IS NOT TO BE MADE WITHOUT THE EXPRESS WRITTEN CONSENT OF MARK S. BISSELL, PRINCIPAL OF BPG, INC. COPYRIGHT 2005.

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists
Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

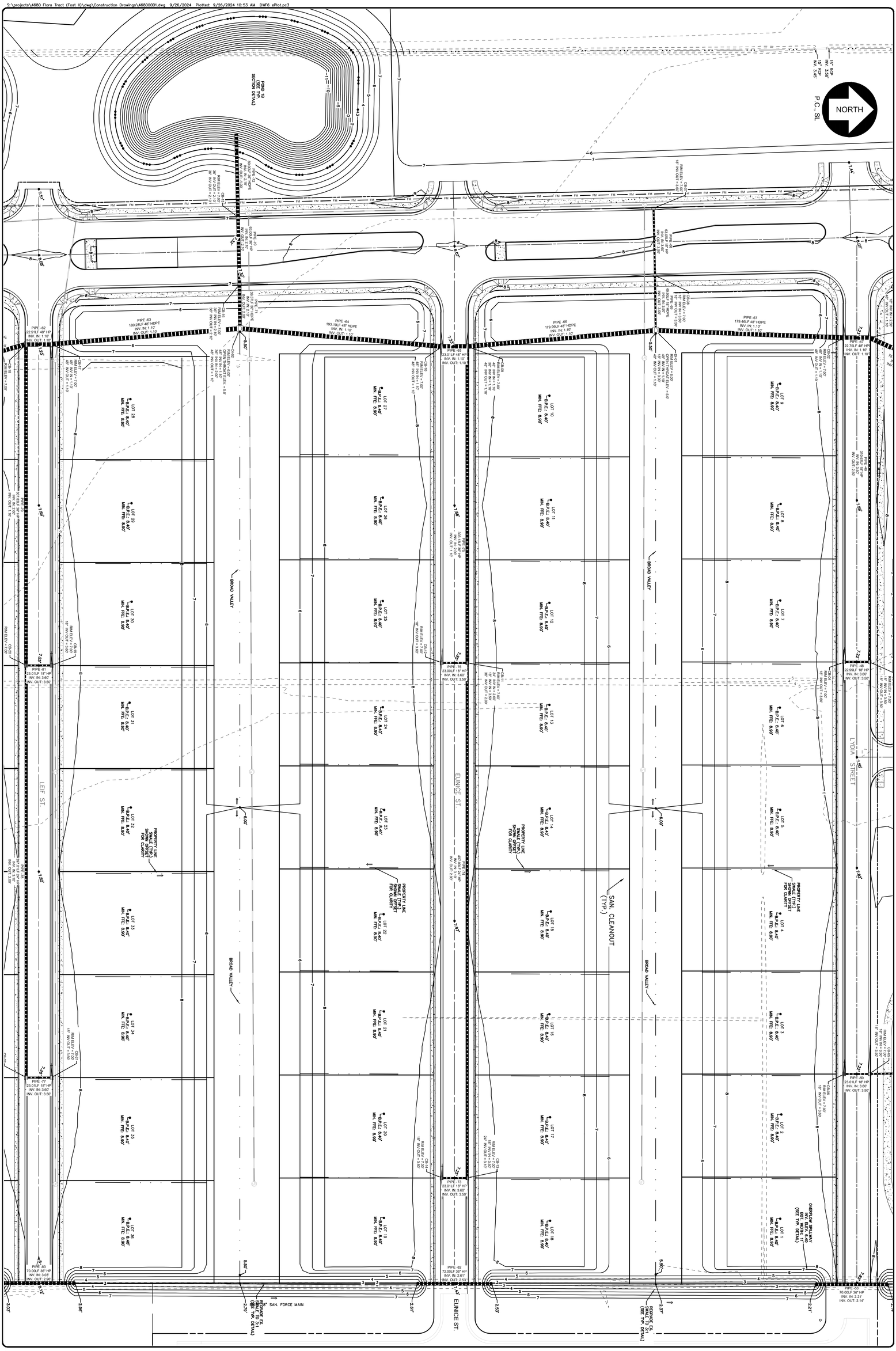
REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7-9-24	LABELS, FFE, PLANTINGS	DMK

PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB
SHEET: 6 OF 49	
CAD FILE: 468000B1	
PROJECT NO: 4680	

S:\projects\4680 Flora Tract (East Of)\dwg\Construction Drawings\468000B1.dwg 9/26/2024 10:53 AM DWE 9/26/2024 plot.pc3



PRELIMINARY
DO NOT USE FOR CONSTRUCTION

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	7-9-24	LABELS & FFE	DMK

PROJECT: FLORA FARM PHASES 1 - 2

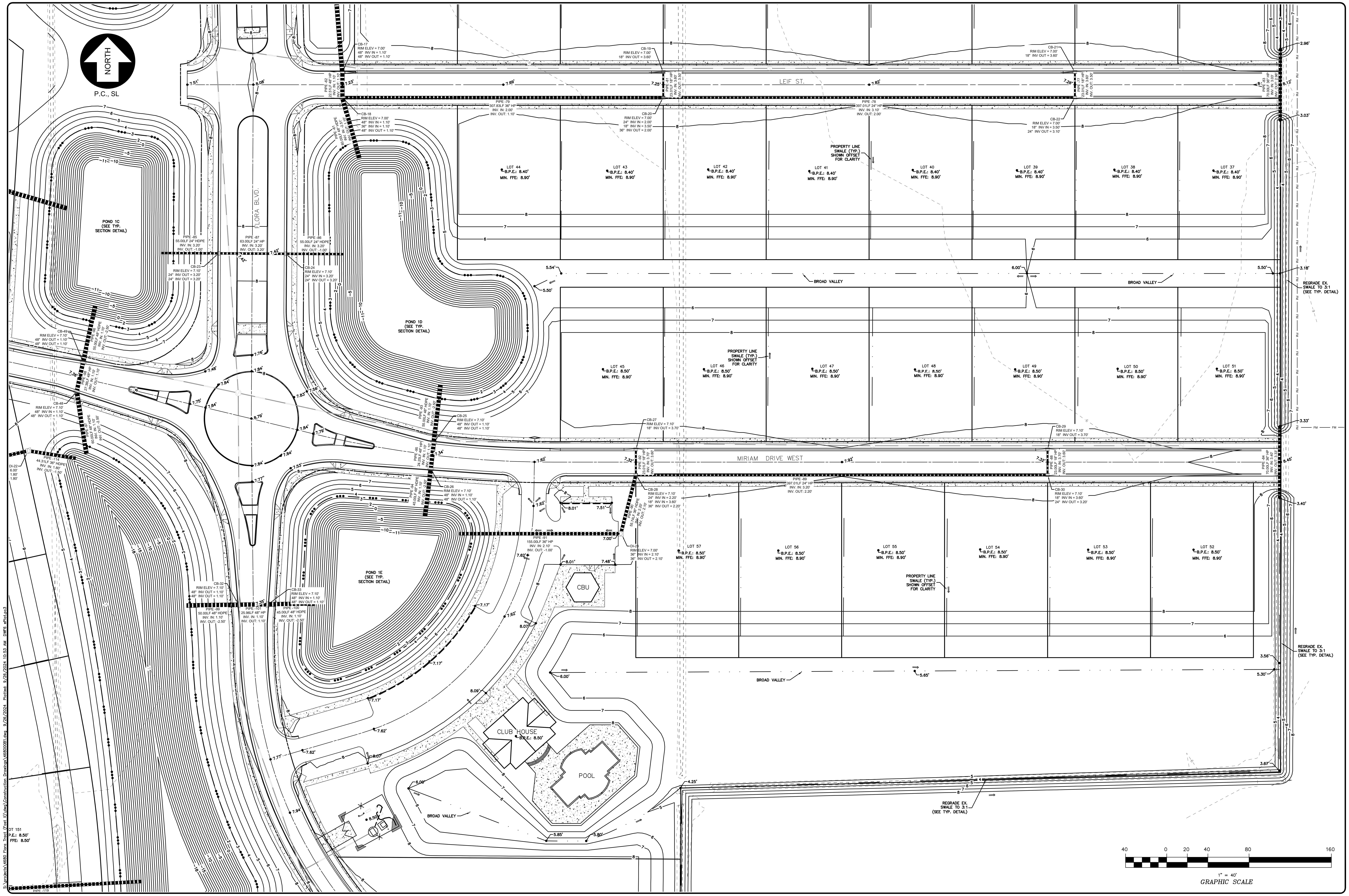
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

GRADING & DRAINAGE PLAN

BISSELL PROFESSIONAL GROUP
Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
Engineers, Planners, Surveyors and Environmental Specialists

PROJECT NO.	4680
DWG FILE	46800B1
SHEET:	7 OF 49
DRAWN BY:	DMK
CHECKED BY:	MSB
APPROVED:	MSB
DATE:	9/26/24
SCALE:	1" = 40'



Bissell Professional Group
Firm License # C-556
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

Engineers, Planners, Surveyors and Environmental Specialists

GRADING & DRAINAGE PLAN

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7-9-24	LABELS & FFE	DMK

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 8 of 49

CAD FILE: 468000B1

PROJECT NO: 4680

NORTH
P.C., SL
40 0 20 40 80 160
1" = 40'
GRAPHIC SCALE
FUTURE DEVELOPMENT
RESIDENTIAL PHASE 3
POND 1B
(SEE TYP.
SECTION DETAIL)
POND 1C
(SEE TYP.
SECTION DETAIL)
POND 1D
(SEE TYP.
SECTION DETAIL)
FLORA BLVD.
MIRIAM DRIVE WEST
MIRIAM DRIVE
BROAD VALLEY
PROPERTY LINE
SWALE (TYP.)
SHOWN OFFSET
FOR CLARITY
LOT 27 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 26 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 25 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 24 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 28 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 29 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 30 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 31 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 44 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 43 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 42 B.P.E.: 8.40' MIN. FFE: 8.90'
LOT 45 B.P.E.: 8.50' MIN. FFE: 8.90'
LOT 46 B.P.E.: 8.50' MIN. FFE: 8.90'
LOT 114 B.P.E.: 8.50' MIN. FFE: 8.50'
LOT 115 B.P.E.: 8.50' MIN. FFE: 8.50'
LOT 116 B.P.E.: 8.50' MIN. FFE: 8.50'
LOT 117 B.P.E.: 8.50' MIN. FFE: 8.50'
LOT 146 B.P.E.: 8.50' MIN. FFE: 9.00'
LOT 147 B.P.E.: 8.50' MIN. FFE: 8.50'
LOT 145 B.P.E.: 8.50' MIN. FFE: 9.00'
LOT 148 B.P.E.: 8.50' MIN. FFE: 8.50'
LOT 57 B.P.E.: 8.50' MIN. FFE: 8.90'

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

GRADING & DRAINAGE PLAN

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7-9-24	LABELS & FFE	DMK

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB
SHEET: 9 OF 49	
CAD FILE: 468000B1	
PROJECT NO: 4680	

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

GRADING & DRAINAGE PLAN

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7-9-24	LABELS & FFE	DMK

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 10 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

GRADING &
DRAINAGE PLAN

THIS DOCUMENT IS THE SOLE PROPERTY OF BPG, INC. OF KITTY HAWK, NORTH CAROLINA. THE REPRODUCTION, IN WHOLE OR PART, OR THE MODIFICATION OF ANY DETAIL OR DESIGN IS NOT TO BE MADE WITHOUT THE EXPRESS WRITTEN CONSENT OF MARK S. BISSELL, PRINCIPAL OF BPG, INC., COPYRIGHT 2005.

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors
and Environmental Specialists

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

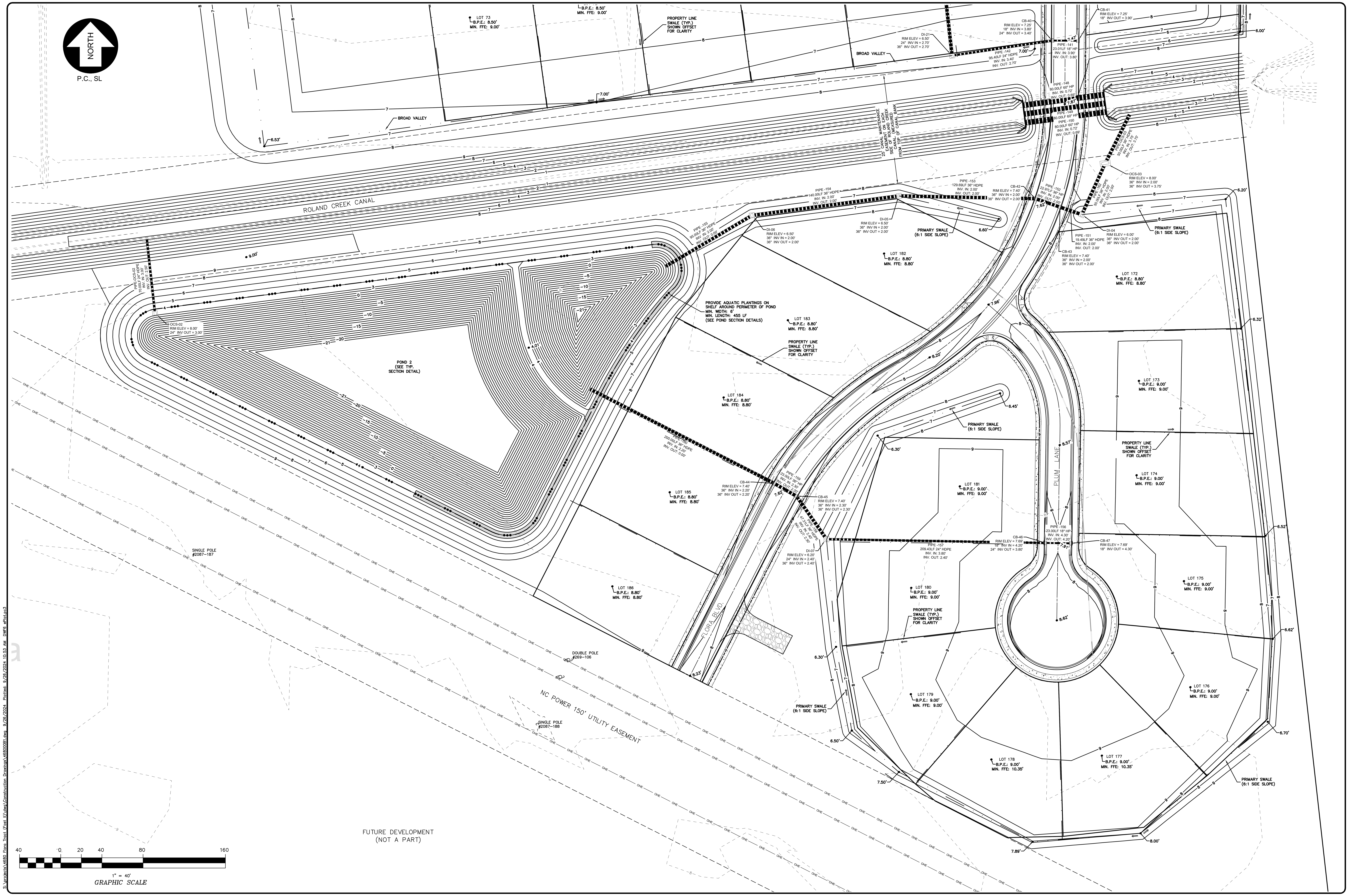
NO.	DATE	DESCRIPTION	BY
1	7-9-24	LABELS & FFE	DMK

PRELIMINARY
DO NOT USE FOR
CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 11 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

S:\projects\4680 Flora Tract (Fost II)\dwg\Construction Drawings\468000B1.dwg 9/26/2024 Plotted: 9/26/2024 10:53 AM DWF6 ePlot.pc3



Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

GRADING & DRAINAGE PLAN

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

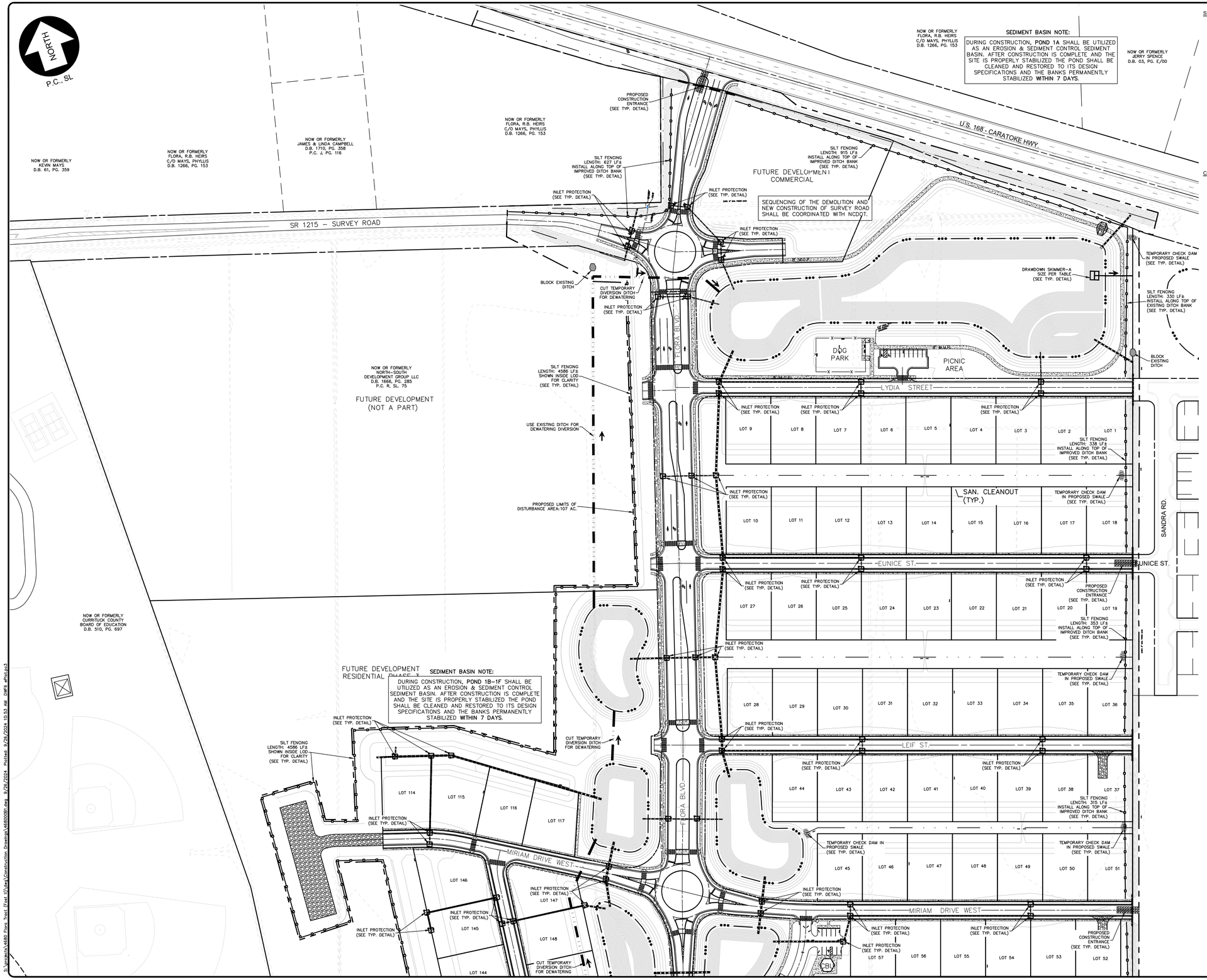
REVISIONS

NO.	DATE	DESCRIPTION	BY
1	7-9-24	LABELS, FFE, PLANTINGS	DMK
2	9-20-24	REV OCS-02	DMK

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 12 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680



100 0 50 100 200 400

1" = 100'

GRAPHIC SCALE

SEDIMENTATION AND EROSION CONTROL NOTES

1. THESE NOTES ARE IN ADDITION TO THE SEDIMENTATION AND EROSION CONTROL NOTES AND DETAILS PROVIDED ON SHEETS 44, 45 & 46.
2. ALL MATERIALS EXCAVATED OVER THE COURSE OF CONSTRUCTION SHALL REMAIN ON THE PROJECT SITE. THIS MATERIAL SHALL BE USED FOR FILLING EXISTING DITCHES, CONSTRUCTION OF ROADWAYS AND PREPARING RESIDENTIAL LOTS AS ILLUSTRATED ON THE GRADING PLANS. IF NECESSARY, EXCAVATED MATERIALS REMAINING AT THE END OF CONSTRUCTION MAY BE DISPOSED OF OFF-SITE AT AN APPROVED AND PERMITTED BORROW PIT OR PLACED BACK INTO PONDS.
3. OFF-SITE BORROW, IF NECESSARY, MUST BE OBTAINED FROM AN APPROVED AND PERMITTED BORROW PIT OR LAND DISTURBANCE.
4. THIS PROJECT IS ANTICIPATED TO BE CONSTRUCTED IN MULTIPLE PHASES.
5. NO GREATER THAN 20 ACRES OF LAND SHALL BE DISTURBED AT ONE TIME. CONSTRUCTION AND STABILIZATION ACTIVITIES SHALL, TO THE MAXIMUM EXTENT PRACTICABLE, BE SCHEDULED ACCORDINGLY.
6. THE FOLLOWING PROVIDES AN ESTIMATED MATERIAL BALANCE OF THIS PHASE OF THE PROJECT:
   APPROXIMATE CUT VOLUME: XXX,XXX CY±
   APPROXIMATE FILL VOLUME: XXX,XXX CY±
   *THE VALUES ARE GROSS ESTIMATES AND ARE PROVIDED FOR PERMITTING PURPOSES ONLY. COMPACTION AND SUITABILITY OF SOILS FOR USE IN CONSTRUCTION ARE NOT CONSIDERED AND ADDITIONAL MATERIAL MAY BE NECESSARY. CONTRACTORS SHALL NOT RELY UPON THESE ESTIMATES AND SHOULD DETERMINE THEIR OWN MATERIAL NEEDED FOR CONSTRUCTION.

CONSTRUCTION SEQUENCE NOTES

THE FOLLOWING CONSTRUCTION SEQUENCE IS FURNISHED AS A GENERAL GUIDE FOR PREPARATION OF A SEQUENCE OF CONSTRUCTION EVENTS. ADDITIONS, DELETIONS AND MODIFICATIONS SHOULD BE MADE AS APPROPRIATE.

THIS SEQUENCE IS A MODIFICATION TO A PRIOR APPROVED PLAN UTILIZED TO CONDUCT EXISTING LAND DISTURBANCES, INCLUDING THE THE EXCAVATION OF PONDS 1A-1F. FOR THIS REASON. THE FOLLOWING SEQUENCE EXCLUDES CONSTRUCTION OF PONDS 1A-1F. AT THIS TIME POND 2 REMAINS UNEXCAVATED AND IS INCLUDED.

1. INSTALL AND/OR MAINTAIN CONSTRUCTION ENTRANCES WHERE SPECIFIED.
2. INSTALL AND/OR MAINTAIN PERIMETER EROSION CONTROL MEASURES WHERE SPECIFIED.
3. IF FURTHER DEWATERING OF PONDS 1B-1F IS NECSSARY, ALL DISCHARGE SHALL BE DIRECTED TO POND 1A THROUGH THE DIVERSION LABELED ON THE PLANS.
4. STABILIZE PONDS 1A-1F. INSTALL OUTLET CONTROL STRUCTURE AND DRAWDOWN SKIMMER IN POND 1A. THE PONDS WILL ACT AS DEWATERING AND SEDIMENT BASINS DURING CONSTRUCTION. THIS IS A CRITICAL IMPROVEMENT AND MUST BE STABILIZED WITHIN 7 DAYS OF COMPLETION.
5. INSTALL TEMPORARY OR PERMANENT CANAL CROSSING.
6. INSTALL TEMPORARY DEWATERING BASIN WHERE SPECIFIED.
7. EXCAVATE POND 2 AND DIRECT DEWATERING TO TEMPORARY DEWATERING BASIN.
8. STABILIZE POND 2. THIS POND WILL ACT AS A SEDIMENT BASINS DURING CONSTRUCTION. THIS IS A CRITICAL IMPROVEMENT AND MUST BE STABILIZED WITHIN 7 DAYS OF COMPLETION
9. CONDUCT GENERAL CONSTRUCTION ACTIVITIES FOR INSTALLATION OF PROPOSED ROADWAY, DRAINAGE AND UTILITY IMPROVEMENTS. LIMIT DISTURBANCE TO 20 ACRES MAX AT ONE TIME.
10. INSTALL TEMPORARY CHECK DAMS WITHIN NEW SWALES WHERE SPECIFIED AND NEEDED.
11. DURING THE COURSE OF CONSTRUCTION, MAINTAIN SILT FENCE, PERIMETER DRAINAGE, TEMPORARY CHECK DAMS, INSTALL CURB INLET PROTECTION AND ANY ADDITIONAL PROTECTION MEASURES AS NECESSARY AND WHERE NOTED.
12. PERMANENTLY SEED AND STABILIZED ALL DISTURBED AREAS.
13. AFTER STABILIZATION IS ESTABLISHED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES, CLEAN OUT AND RETURN PONDS TO DESIGN CONDITIONS AND SEED & STABILIZE THOSE AREAS.

Bissell Professional Group
Engineering Surveying
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
PHONE (252) 261-3300
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

EROSION & SEDIMENT CONTROL PLAN & SEQUENCE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK NORTH CAROLINA CURRITUCK COUNTY
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

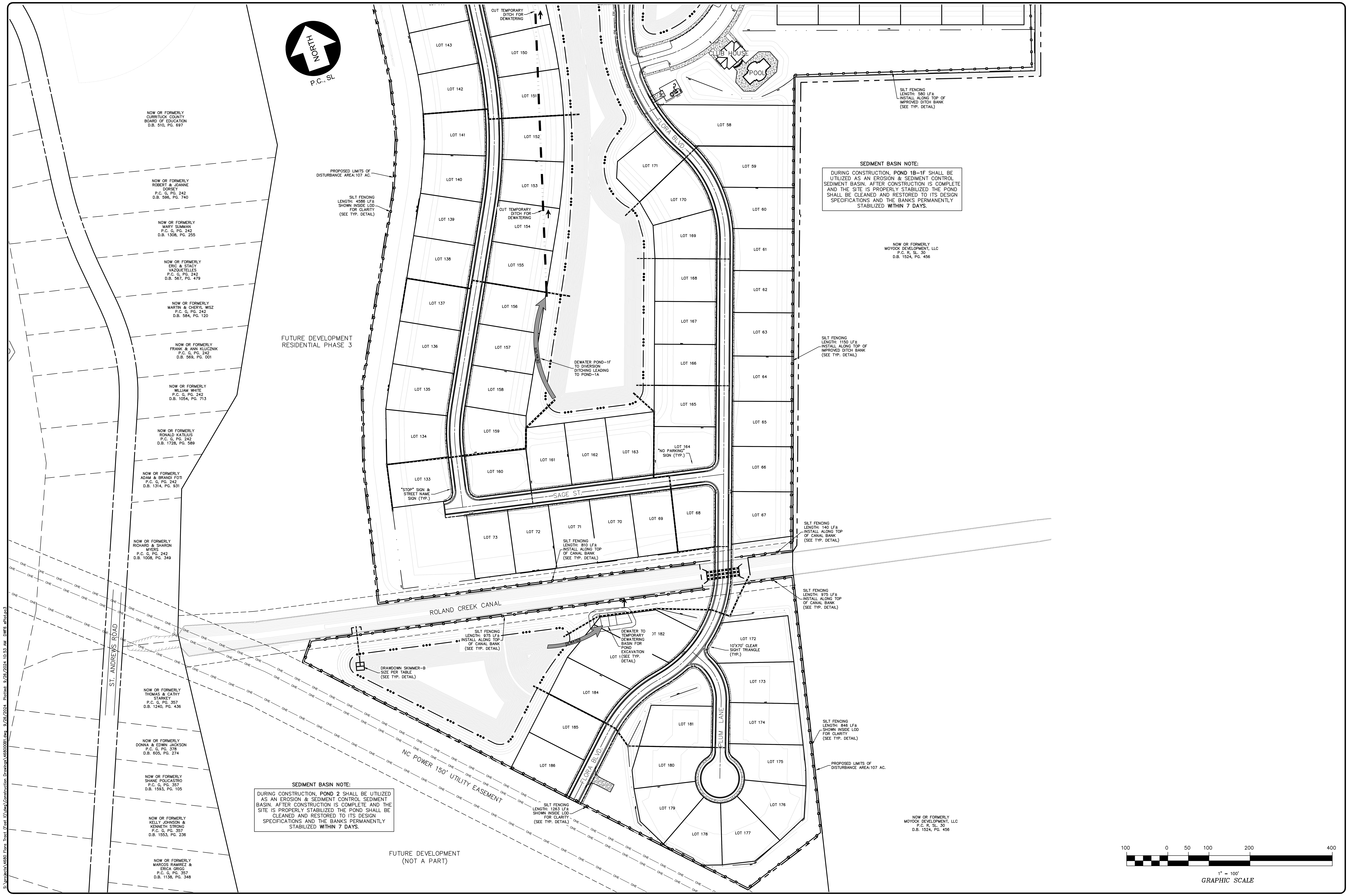
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=100'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 13 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680



Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

EROSION & SEDIMENT CONTROL PLAN & SEQUENCE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK, CURRITUCK COUNTY, NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

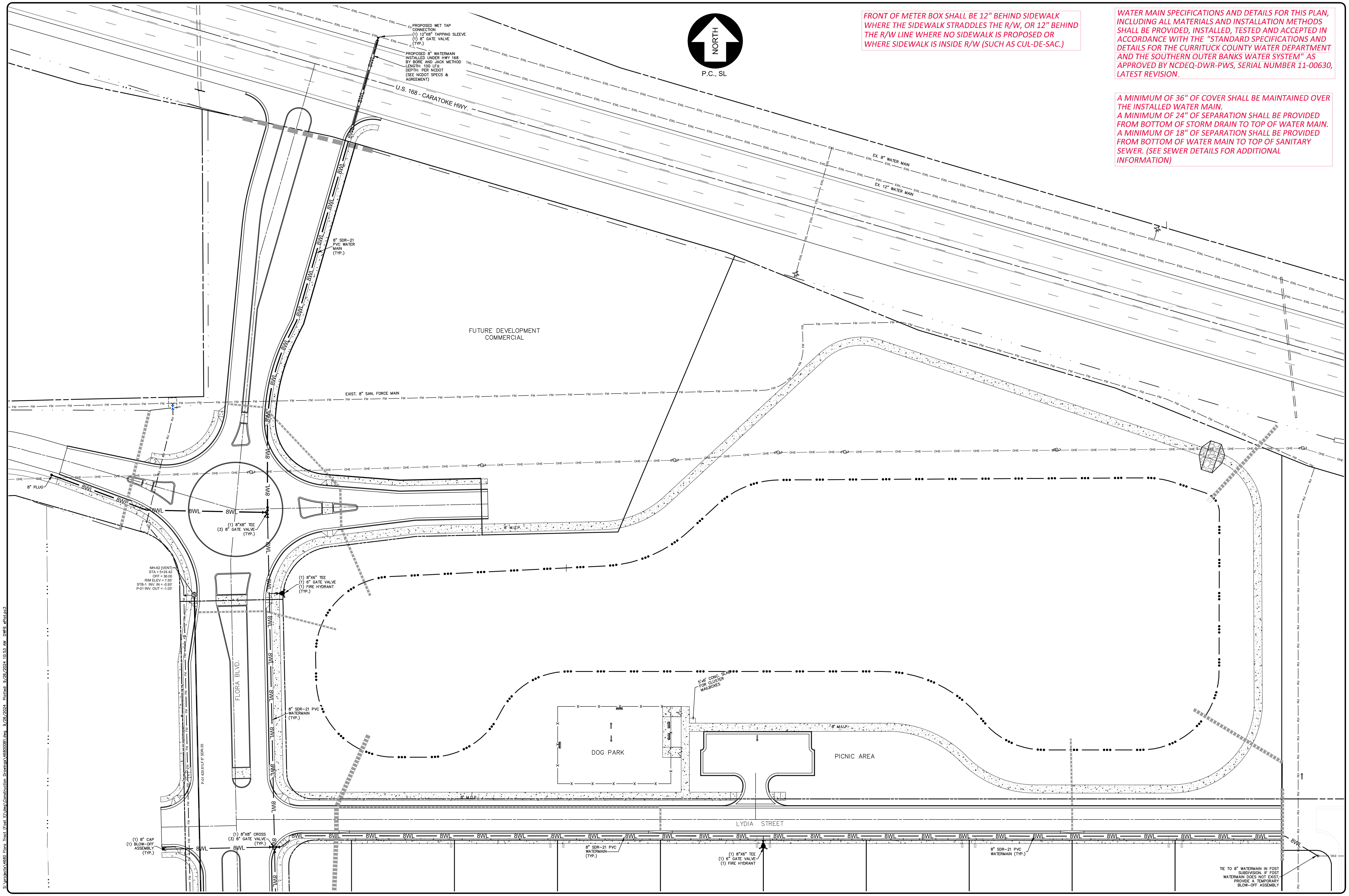
PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24
SCALE: 1"=100'
DESIGNED: BPG
CHECKED: MSB
DRAWN: DMK
APPROVED: MSB
SHEET: 14 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

FRONT OF METER BOX SHALL BE 12" BEHIND SIDEWALK WHERE THE SIDEWALK STRADDLES THE R/W, OR 12" BEHIND THE R/W LINE WHERE NO SIDEWALK IS PROPOSED OR WHERE SIDEWALK IS INSIDE R/W (SUCH AS CUL-DE-SAC.)

WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.
A MINIMUM OF 24" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF WATER MAIN TO TOP OF SANITARY SEWER. (SEE SEWER DETAILS FOR ADDITIONAL INFORMATION)



Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION & WATER MAIN EXTENSION

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

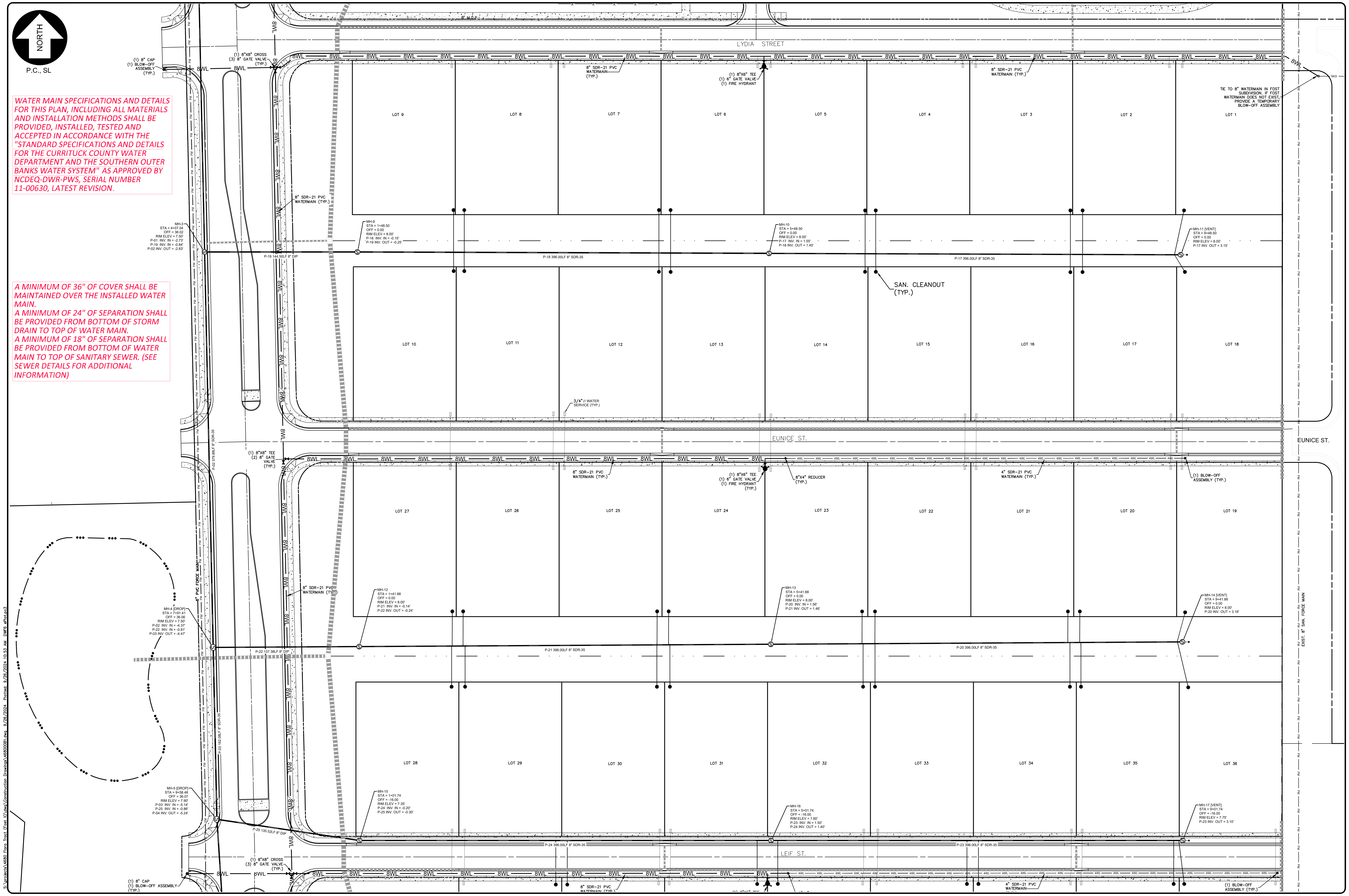
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 15 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680



WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.
A MINIMUM OF 24" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF WATER MAIN TO TOP OF SANITARY SEWER. (SEE SEWER DETAILS FOR ADDITIONAL INFORMATION)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION & WATER MAIN EXTENSION

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

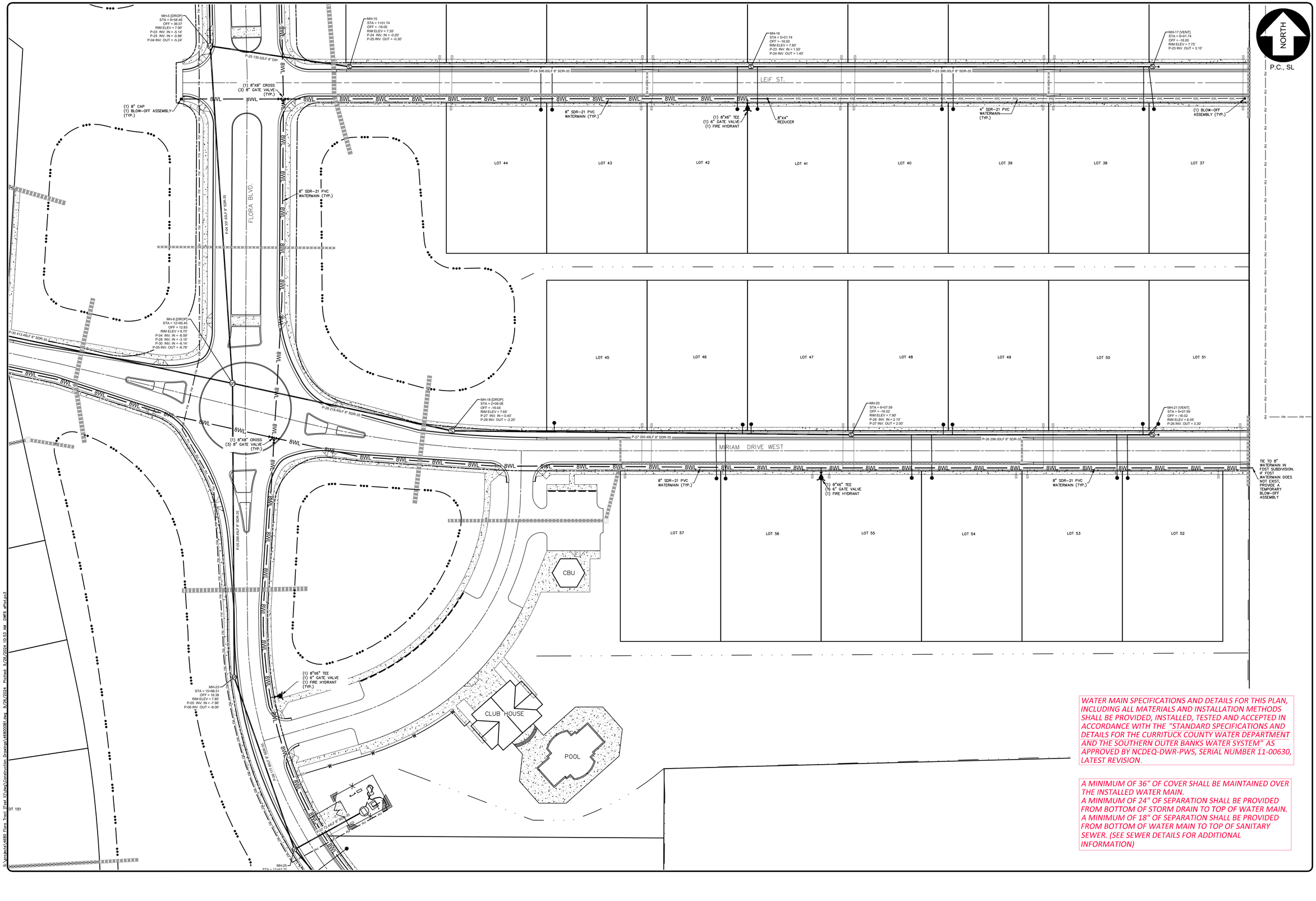
REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 16 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680



WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.
A MINIMUM OF 24" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF WATER MAIN TO TOP OF SANITARY SEWER. (SEE SEWER DETAILS FOR ADDITIONAL INFORMATION)

Bissell Professional Group
Engineering | Surveying
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
PHONE (252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION & WATER MAIN EXTENSION

FLORA FARM PHASES 1 - 2

MOYOCK — CURRITUCK COUNTY — NORTH CAROLINA

CONSTRUCTION DRAWINGS

PROJECT: FLORA FARM

NO.	DATE	REVISIONS DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

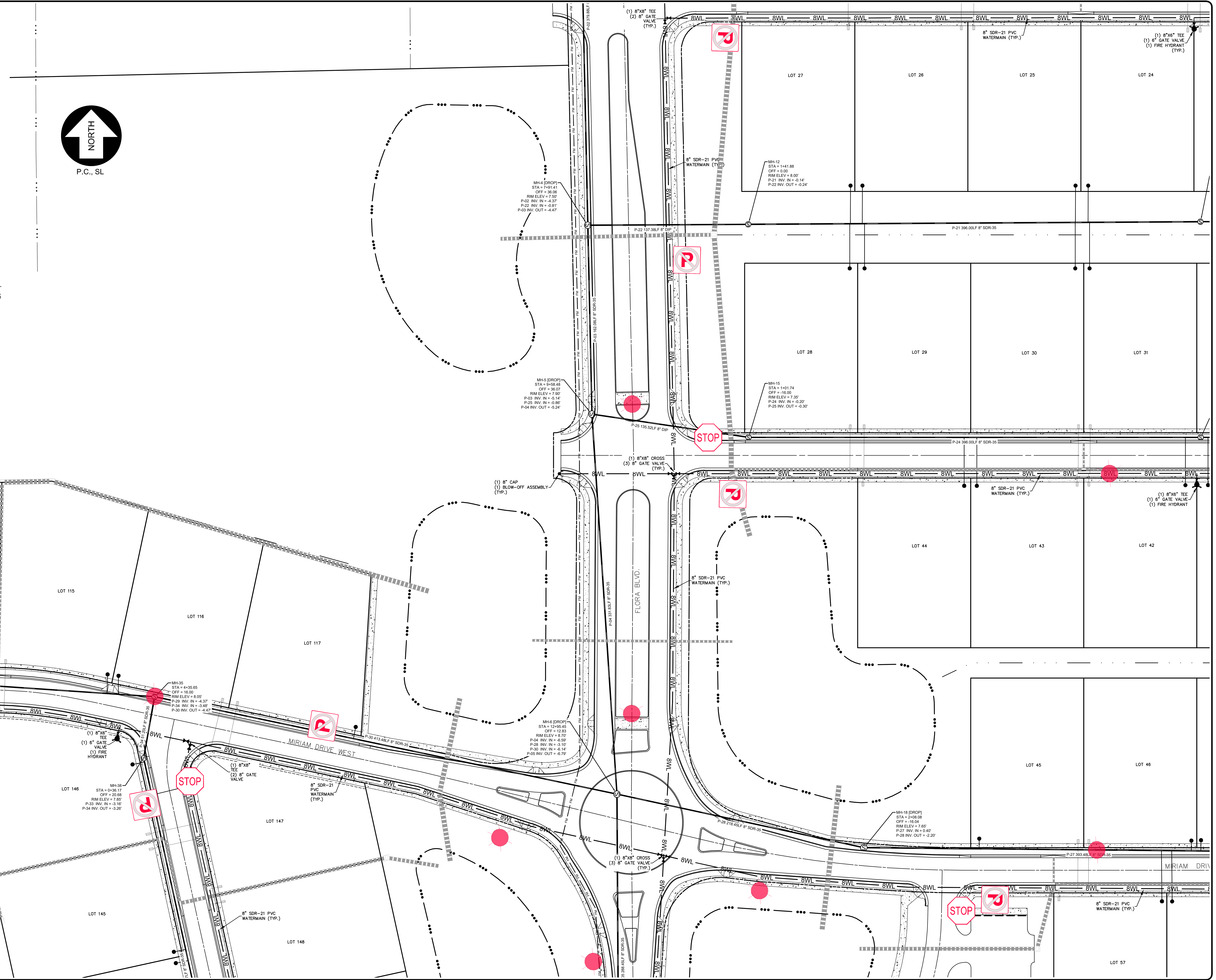
SHEET: 17 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF WATER MAIN TO TOP OF SANITARY SEWER. (SEE SEWER DETAILS FOR ADDITIONAL INFORMATION)



Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION & WATER MAIN EXTENSION

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB
SHEET: 18 of 49	
CAD FILE: 468000B1	
PROJECT NO: 4680	

WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF WATER MAIN TO TOP OF SANITARY SEWER. (SEE SEWER DETAILS FOR ADDITIONAL INFORMATION)

BISSELL PROFESSIONAL GROUP

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION & WATER MAIN EXTENSION

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 19 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF WATER MAIN TO TOP OF SANITARY SEWER. (SEE SEWER DETAILS FOR ADDITIONAL INFORMATION)

FUTURE DEVELOPMENT
RESIDENTIAL PHASE 3

Bissell Professional Group
Engineering & Surveying
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION & WATER MAIN EXTENSION

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 20 OF 49

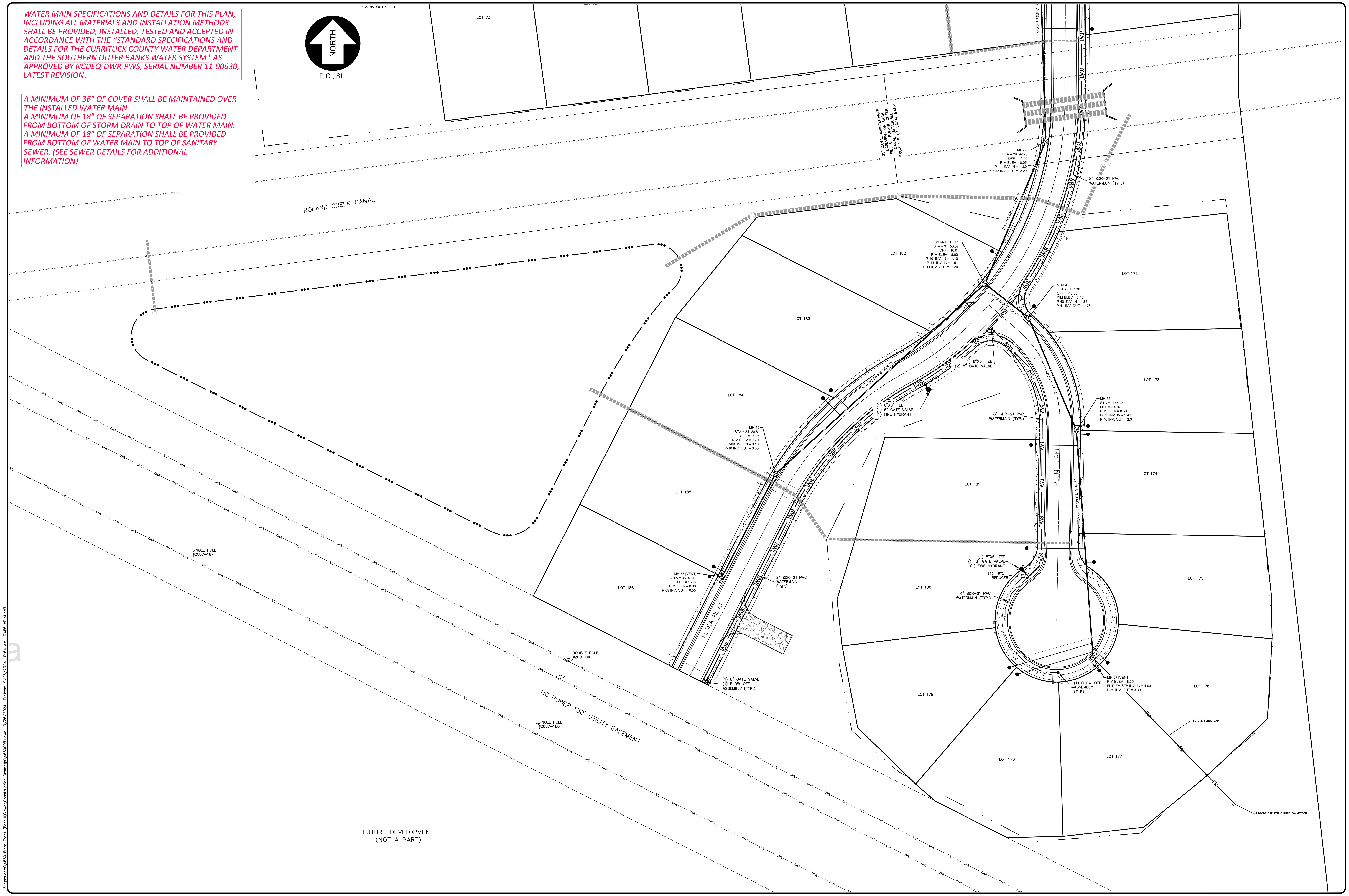
CAD FILE: 468000B1

PROJECT NO: 4680

S:\projects\4680 Flora Tract (Fast I)\Dwg\Construction Drawings\4680000.dwg 9/26/2024 Plotted: 9/26/2024 10:54 AM DWG ePlot.pc3

WATER MAIN SPECIFICATIONS AND DETAILS FOR THIS PLAN, INCLUDING ALL MATERIALS AND INSTALLATION METHODS SHALL BE PROVIDED, INSTALLED, TESTED AND ACCEPTED IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS AND DETAILS FOR THE CURRITUCK COUNTY WATER DEPARTMENT AND THE SOUTHERN OUTER BANKS WATER SYSTEM" AS APPROVED BY NCDEQ-DWR-PWS, SERIAL NUMBER 11-00630, LATEST REVISION.

A MINIMUM OF 36" OF COVER SHALL BE MAINTAINED OVER THE INSTALLED WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF STORM DRAIN TO TOP OF WATER MAIN.
A MINIMUM OF 18" OF SEPARATION SHALL BE PROVIDED FROM BOTTOM OF WATER MAIN TO TOP OF SANITARY SEWER. (SEE SEWER DETAILS FOR ADDITIONAL INFORMATION)



NORTH
P.C., SL
LOT 73
ROLAND CREEK CANAL
25' CANAL MAINTENANCE EASEMENT ON EACH SIDE OF ROLAND CREEK CANAL MEASURED FROM TOP OF CANAL BANK
MH-50
STA = 29+92.23
OFF = 15.99
RIM ELEV = 8.05'
P-11 INV. IN = -1.80'
P-12 INV. OUT = -2.20'
8" SDR-21 PVC WATERMAIN (TYP.)
MH-49 (DROP)
STA = 31+53.02
OFF = 16.01
RIM ELEV = 8.00'
P-10 INV. IN = -1.10'
P-41 INV. IN = 1.51'
P-11 INV. OUT = -1.20'
MH-54
STA = 0+37.30
OFF = -16.00
RIM ELEV = 8.40'
P-40 INV. IN = 1.83'
P-41 INV. OUT = 1.73'
LOT 182
LOT 172
LOT 183
(1) 8"X8" TEE
(2) 8" GATE VALVE
LOT 173
LOT 184
(1) 8"X6" TEE
(1) 6" GATE VALVE
(1) FIRE HYDRANT
8" SDR-21 PVC WATERMAIN (TYP.)
MH-55
STA = 1+46.48
OFF = -15.97
RIM ELEV = 8.60'
P-39 INV. IN = 2.41'
P-40 INV. OUT = 2.31'
MH-52
STA = 34+28.81
OFF = 16.06
RIM ELEV = 7.70'
P-09 INV. IN = 0.10'
P-10 INV. OUT = 0.00'
LOT 174
LOT 181
PLUM LANE
LOT 185
(1) 8"X6" TEE
(1) 6" GATE VALVE
(1) FIRE HYDRANT
(1) 8"X4" REDUCER
MH-53 (VENT)
STA = 35+40.19
OFF = 15.97
RIM ELEV = 8.00'
P-09 INV. OUT = 0.55'
8" SDR-21 PVC WATERMAIN (TYP.)
LOT 186
LOT 180
4" SDR-21 PVC WATERMAIN (TYP.)
LOT 175
SINGLE POLE #2087-187
FLORA BLVD.
DOUBLE POLE #269-106
(1) 8" GATE VALVE
(1) BLOW-OFF ASSEMBLY (TYP.)
(1) BLOW-OFF ASSEMBLY (TYP)
MH-57 (VENT)
RIM ELEV = 8.30'
FUT. FM STB INV. IN = 4.00'
P-39 INV. OUT = 3.30'
LOT 179
LOT 176
NC POWER 150' UTILITY EASEMENT
SINGLE POLE #2087-188
FUTURE FORCE MAIN
LOT 178
LOT 177
PROVIDE CAP FOR FUTURE CONNECTION
FUTURE DEVELOPMENT (NOT A PART)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTE WATER COLLECTION & WATER MAIN EXTENSION

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=40'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 21 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

STREET TREE REQUIREMENTS (SECTION 6.2.L)

CODE REQUIREMENT	STREET	TOTAL QUANTITY REQUIRED	TOTAL QUANTITY PROVIDED	CODE SECTION
STREET TREES SHALL BE REQUIRED ALONG BOTH SIDES OF ALL STREETS AT RATE OF 50' O.C. FOR CANOPY TREES AND BETWEEN 20' - 30' O.C. FOR UNDERSTORY TREES	SURVEY ROAD	188' / 50' = **3 CANOPY TREES** *675 / 30' = **22 UNDERSTORY TREES**	**3 CANOPY TREES** **22 UNDERSTORY TREES**	*SECTION 6.2.L*
	FLORA BOULEVARD	6982' / 50' = **139 CANOPY TREES**	**139 CANOPY TREES**	*SECTION 6.2.L*
	LYDIA STREET	1903' / 50' = **38 CANOPY TREES**	**38 CANOPY TREES**	*SECTION 6.2.L*
	EUNICE STREET	1910' / 50' = **38 CANOPY TREES**	**38 CANOPY TREES**	*SECTION 6.2.L*
	LEIF STREET	1896' / 50' = **37 CANOPY TREES**	**37 CANOPY TREES**	*SECTION 6.2.L*
	MIRIAM DRIVE WEST	3059' / 50' = **61 CANOPY TREES**	**61 CANOPY TREES**	*SECTION 6.2.L*
	ARDEN STREET	2934' / 50' = **58 CANOPY TREES**	**58 CANOPY TREES**	*SECTION 6.2.L*
	SAGE STREET	1198' / 50' = **23 CANOPY TREES**	**23 CANOPY TREES**	*SECTION 6.2.L*
	LYNNE LANE	833' / 50' = **16 CANOPY TREES**	**16 CANOPY TREES**	*SECTION 6.2.L*

*NOTE: UNDERSTORY TREE CALCULATIONS ONLY INCLUDE AREAS UNDER OVERHEAD POWER.

SITE LANDSCAPE REQUIREMENTS (SECTION 5.2.4)

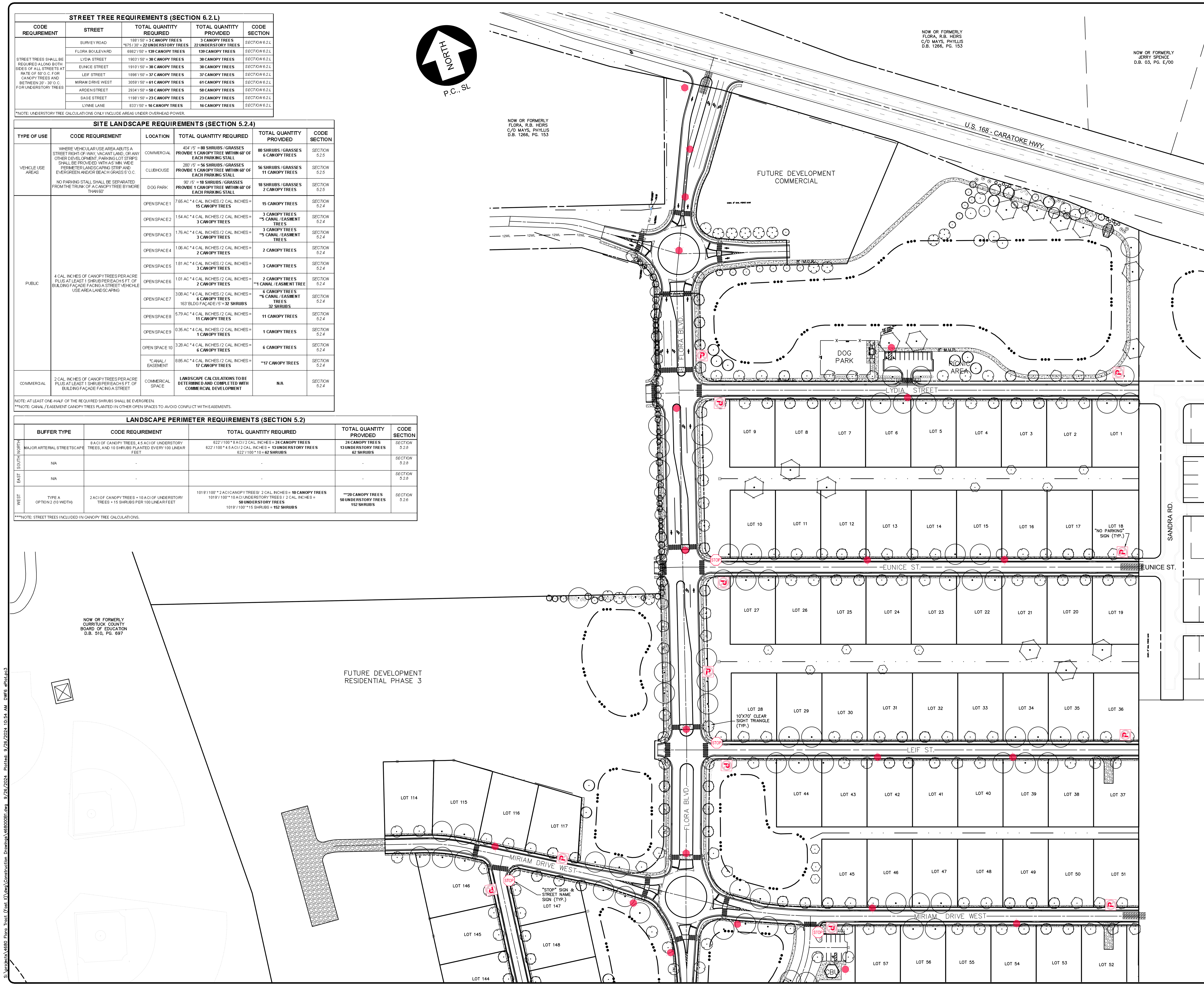
TYPE OF USE	CODE REQUIREMENT	LOCATION	TOTAL QUANTITY REQUIRED	TOTAL QUANTITY PROVIDED	CODE SECTION
VEHICLE USE AREAS	WHERE VEHICULAR USE AREA ABUTS A STREET RIGHT-OF-WAY, VACANT LAND, OR ANY OTHER DEVELOPMENT, PARKING LOT STRIPS SHALL BE PROVIDED WITH A 5' MIN. WIDE PERIMETER LANDSCAPING STRIP AND EVERGREEN AND/OR BEACH GRASS 5' O.C. NO PARKING STALL SHALL BE SEPARATED FROM THE TRUNK OF A CANOPY TREE BY MORE THAN 60'	COMMERCIAL	404' /5' = **80 SHRUBS / GRASSES** **PROVIDE 1 CANOPY TREE WITHIN 60' OF EACH PARKING STALL**	**80 SHRUBS / GRASSES** **6 CANOPY TREES**	*SECTION 5.2.5*
		CLUBHOUSE	280' /5' = **56 SHRUBS / GRASSES** **PROVIDE 1 CANOPY TREE WITHIN 60' OF EACH PARKING STALL**	**56 SHRUBS / GRASSES** **11 CANOPY TREES**	*SECTION 5.2.5*
		DOG PARK	90' /5' = **18 SHRUBS / GRASSES** **PROVIDE 1 CANOPY TREE WITHIN 60' OF EACH PARKING STALL**	**18 SHRUBS / GRASSES** **2 CANOPY TREES**	*SECTION 5.2.5*
PUBLIC	4 CAL. INCHES OF CANOPY TREES PER ACRE PLUS AT LEAST 1 SHRUB PER EACH 5 FT. OF BUILDING FAÇADE FACING A STREET VEHICHLE USE AREA LANDSCAPING	OPEN SPACE 1	7.65 AC * 4 CAL. INCHES /2 CAL. INCHES = **15 CANOPY TREES**	**15 CANOPY TREES**	*SECTION 5.2.4*
		OPEN SPACE 2	1.54 AC * 4 CAL. INCHES /2 CAL. INCHES = **3 CANOPY TREES**	**3 CANOPY TREES** ****5 CANAL / EASMENT TREES**	*SECTION 5.2.4*
		OPEN SPACE 3	1.76 AC * 4 CAL. INCHES /2 CAL. INCHES = **3 CANOPY TREES**	**3 CANOPY TREES** ****5 CANAL / EASMENT TREES**	*SECTION 5.2.4*
		OPEN SPACE 4	1.06 AC * 4 CAL. INCHES /2 CAL. INCHES = **2 CANOPY TREES**	**2 CANOPY TREES**	*SECTION 5.2.4*
		OPEN SPACE 5	1.81 AC * 4 CAL. INCHES /2 CAL. INCHES = **3 CANOPY TREES**	**3 CANOPY TREES**	*SECTION 5.2.4*
		OPEN SPACE 6	1.01 AC * 4 CAL. INCHES /2 CAL. INCHES = **2 CANOPY TREES**	**2 CANOPY TREES** ****1 CANAL / EASMENT TREE**	*SECTION 5.2.4*
		OPEN SPACE 7	3.08 AC * 4 CAL. INCHES /2 CAL. INCHES = **6 CANOPY TREES** 163' BLDG FAÇADE / 5' = **32 SHRUBS**	**6 CANOPY TREES** ****6 CANAL / EASMENT TREES** **32 SHRUBS**	*SECTION 5.2.4*
		OPEN SPACE 8	5.79 AC * 4 CAL. INCHES /2 CAL. INCHES = **11 CANOPY TREES**	**11 CANOPY TREES**	*SECTION 5.2.4*
		OPEN SPACE 9	0.35 AC * 4 CAL. INCHES /2 CAL. INCHES = **1 CANOPY TREES**	**1 CANOPY TREES**	*SECTION 5.2.4*
		OPEN SPACE 10	3.28 AC * 4 CAL. INCHES /2 CAL. INCHES = **6 CANOPY TREES**	**6 CANOPY TREES**	*SECTION 5.2.4*
		*CANAL / EASEMENT	8.85 AC * 4 CAL. INCHES /2 CAL. INCHES = **17 CANOPY TREES**	****17 CANOPY TREES**	*SECTION 5.2.4*
COMMERCIAL	2 CAL. INCHES OF CANOPY TREES PER ACRE PLUS AT LEAST 1 SHRUB PER EACH 5 FT. OF BUILDING FAÇADE FACING A STREET	COMMERICAL SPACE	**LANDSCAPE CALCULATIONS TO BE DETERMINED AND COMPLETED WITH COMMERCIAL DEVELOPMENT**	**N/A**	*SECTION 5.2.4*

NOTE: AT LEAST ONE-HALF OF THE REQUIRED SHRUBS SHALL BE EVERGREEN.
**NOTE: CANAL / EASEMENT CANOPY TREES PLANTED IN OTHER OPEN SPACES TO AVOID CONFLICT WITH EASEMENTS.

LANDSCAPE PERIMETER REQUIREMENTS (SECTION 5.2)

	BUFFER TYPE	CODE REQUIREMENT	TOTAL QUANTITY REQUIRED	TOTAL QUANTITY PROVIDED	CODE SECTION
NORTH	MAJOR ARTERIAL STREETSCAPE	8 ACI OF CANOPY TREES, 4.5 ACI OF UNDERSTORY TREES, AND 10 SHRUBS PLANTED EVERY 100 LINEAR FEET	622' / 100 * 8 ACI / 2 CAL. INCHES = **24 CANOPY TREES** 622' / 100 * 4.5 ACI / 2 CAL. INCHES = **13 UNDERSTORY TREES** 622' / 100 * 10 = **62 SHRUBS**	**24 CANOPY TREES** **13 UNDERSTORY TREES** **62 SHRUBS**	*SECTION 5.2.8*
SOUTH	N/A	-	-	-	*SECTION 5.2.8*
EAST	N/A	-	-	-	*SECTION 5.2.8*
WEST	TYPE A OPTION 2 (10 WIDTH)	2 ACI OF CANOPY TREES + 10 ACI OF UNDERSTORY TREES + 15 SHRUBS PER 100 LINEAR FEET	1019' / 100' * 2 ACI CANOPY TREES/ 2 CAL. INCHES = **10 CANOPY TREES** 1019' / 100' * 10 ACI UNDERSTORY TREES / 2 CAL. INCHES = **50 UNDERSTORY TREES** 1019' / 100' * 15 SHRUBS = **152 SHRUBS**	*****20 CANOPY TREES** **50 UNDERSTORY TREES** **152 SHRUBS**	*SECTION 5.2.6*

***NOTE: STREET TREES INCLUDED IN CANOPY TREE CALCULATIONS.



100 0 50 100 200 400

1" = 100'

GRAPHIC SCALE

GENERAL LANDSCAPE NOTES:

1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
2. ALL PLANTS MUST BE CONTAINER GROWN OR BALLED AND BURLAPPED AS INDICATED IN THE PLANT LIST.
3. ALL TREES MUST HAVE A STRAIGHT TRUNK AND FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
6. ALL TREES LOCATED WITHIN VEHICLE SIGHT TRIANGLES SHALL BE BRANCHED MIN. 8' (MEASURED FROM ADJACENT PROJECTED CURB LINE ELEVATION) PER ANSI Z60.1 STANDARDS FOR HEIGHT OF BRANCHING - STREET TREES.
7. ALL PLANTING AREAS MUST BE COMPLETELY MULCHED AS SPECIFIED. MULCH TO BE 3 INCHES OF DOUBLE SHREDDED HARDWOOD DESIGNER MULCH IN DARK BROWN OR OWNER PREFERENCE.
8. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION. CONTRACTOR IS ALSO RESPONSIBLE FOR COORDINATING ALL UTILITY ADJUSTMENTS WITH FINAL FINISH GRADE. ALL UTILITIES SHALL SIT FLUSH WITH FINISH GRADES (BOTH PAVED AND LANDSCAPED SURFACES).
9. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK. ANY DISCREPANCIES BETWEEN QUANTITIES ON PLAN AND PLANT LIST SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT LANDSCAPE ARCHITECT AND ANY FIELD ADJUSTMENTS OR QUANTITY ADJUSTMENTS MUST BE AUTHORIZED PRIOR TO PLANTING.
10. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, WEEDING, FERTILIZING, ETC.) OF THE PLANTING AREAS AND LAWN UNTIL SUBSTANTIAL COMPLETION.
11. THE CONTRACTOR SHALL COMPLETELY WARRANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING ON THE DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE WARRANTEE PERIOD.
12. THE LANDSCAPE ARCHITECT SHALL APPROVE THE STAKING LOCATION OF ALL PLANT MATERIAL PRIOR TO INSTALLATION. CONTRACTOR SHALL CONTACT THE PROJECT LANDSCAPE ARCHITECT A MINIMUM OF ONE(1) WEEK IN ADVANCE TO SCHEDULE STAKING.
13. AFTER BEING DUG AT THE NURSERY SOURCE, ALL TREES IN LEAF SHALL BE ACCLIMATED FOR TWO (2) WEEKS UNDER A MIST SYSTEM PRIOR TO INSTALLATION.
14. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO SUBSTANTIAL COMPLETION OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE MEETING ALL PLANT SCHEDULE SPECIFICATIONS.
15. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
16. ALL SHRUB, GROUND COVER AND PERENNIAL PLANTING BEDS ARE TO BE COMPLETELY COVERED WITH DOUBLE SHREDDED HARDWOOD DESIGNER MULCH IN DARK BROWN OR OWNER PREFERENCE TO A DEPTH OF THREE (3) INCHES. ANY EXISTING LANDSCAPE BEDS THAT ARE DISTURBED MUST BE MULCHED TO MATCH EXISTING MULCH FOUND WITHIN LANDSCAPE BED.
17. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD.
18. SAFE, CLEARLY MARKED PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT PROPERTIES MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.
19. ALL PLANT MATERIAL QUANTITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE COVERAGE OF ALL PLANTING BEDS AT SPACING SHOWN.
20. THE TOP OF ALL ROOT BALLS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE, AS BORN TO PREVIOUS GRADE AND GROWING CONDITIONS.
21. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TREES AND SHRUBS THAT WILL MEET BOTH MINIMUM SIZE AND SPACING FOR TREE AND THE COUNTY OF CURRITUCK UNIFIED DEVELOPMENT ORDINANCE (UDO). FAILURE TO INSTALL PLANT MATERIAL PER THIS PLAN WILL JEOPARDIZE ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING INSPECTIONS OF PLANT MATERIAL.
23. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES & ORDINANCES REGARDING LANDSCAPING. GENERAL CONTRACTOR IS TO CLEAN THE ENTIRE SITE OF ALL CONSTRUCTION DEBRIS PRIOR TO FINAL INSPECTION.
24. THE CONTRACTOR SHALL INSTALL NON-WOVEN GEOTEXTILE UNDER PLANTING BED MULCH IN ALL LANDSCAPE BEDS TO PREVENT WEED GROWTH.
25. NO PLANT SUBSTITUTIONS ARE PERMITTED WITHOUT APPROVAL OF THE COUNTY OF CURRITUCK AND THE PROJECT LANDSCAPE ARCHITECT.

SOIL AMENDMENT NOTES:

1. SOIL INSTRUCTIONS FOR ALL NEW PLANTING AREAS (INCLUDING SEED AREAS) AT PREVIOUSLY PAVED LOCATIONS: REMOVE ALL PAVEMENT, GRAVEL SUB-BASE, AND CONSTRUCTION DEBRIS. FOR ALL AREAS TO RECEIVE TREES, SHRUBS, GROUNDCOVERS, AND / OR ORNAMENTAL GRASSES; THE CONTRACTOR SHALL REMOVE EXISTING SOIL AND ADD 12" OF NEW TOPSOIL TO MEET THE PLANTING MIX STANDARDS. TOPSOIL SHALL BE TESTED BY A CERTIFIED SOIL TESTING AGENCY AND SHALL BE AMENDED PER THE RECOMMENDATIONS FOUND WITHIN THE SOILS ANALYSIS. FOR ALL AREAS TO RECEIVE SOD AND / OR SEED; THE CONTRACTOR SHALL REMOVE EXISTING SOIL AND ADD 3" OF NEW TOPSOIL TO MEET THE PLANTING MIX STANDARDS. TOPSOIL SHALL BE TESTED BY A CERTIFIED SOIL TESTING AGENCY AND SHALL BE AMENDED PER THE RECOMMENDATIONS FOUND WITHIN THE SOILS ANALYSIS.

2. SOIL INSTRUCTIONS FOR ALL EXISTING PLANTING AREAS (NOT PREVIOUSLY PAVED LOCATIONS): THE CONTRACTOR SHALL TAKE A MINIMUM OF FOUR (4) SAMPLES THROUGHOUT THE PROJECT SITE AND SHALL SUBMIT THEM TO BE TESTED TO A CERTIFIED SOIL TESTING AGENCY. THE CONTRACTOR SHALL AMEND ALL EXISTING SOIL WITHIN EXISTING DISTURBED PLANTING AREAS PER THE RECOMMENDATIONS FOUND WITHIN THE SOILS ANALYSIS. AREAS TO RECEIVE TREES, SHRUBS, GROUNDCOVERS, AND / OR ORNAMENTAL GRASSES SHALL BE AMENDED TO A DEPTH OF 6". AREAS TO RECEIVE SOD SHALL BE AMENDED TO A DEPTH OF 3".

TREE & SHRUB SPECIES AND PLANTING GUIDELINES:

ALL TREES AND SHRUBS SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANTING STANDARDS SPECIFIED IN SECTION 3.5 OF THE CURRITUCK COUNTY ADMINISTRATIVE MANUAL AND THIS PLAN.

- CANOPY AND UNDERSTORY TREE SPECIES SHALL BE OF THOSE LISTED UNDER "TABLE 3.4.6: RECOMMENDED PLANTINGS" IN THE SAME MANUAL.
- TREE SPECIES SHALL BE DIVERSE. A MINIMUM OF (4) DIFFERENT SPECIES OF CANOPY AND UNDERSTORY TREES SHALL BE INSTALLED IN ROUGHLY EQUAL PROPORTIONS.
- AT INSTALLATION, CANOPY TREES SHALL HAVE A MINIMUM CALIPER OF 2 INCHES MEASURED AT 6 INCHES. ABOVE GRADE. EIGHT FOOT HIGH TREES MAY BE PLANTED AS AN ALTERNATIVE.
- AT INSTALLATION, UNDERSTORY TREES SHALL HAVE A MINIMUM CALIPER OF 1.5 INCHES MEASURES AT 6 INCHES ABOVE GRADE. SIX FOOT HIGH TREES MAY BE PLANTED AS AN ALTERNATIVE.
- SHRUBS SHALL BE PLANTED AT THE SPACING NOTED ON THE PLANS AND FORM A VISUAL SCREEIN WITH A MIN. MATURE HEIGHT OF 36". SHRUBS SHALL BE EVERGREEN AS NOTED AND BE A MINIMUM OF (3) GALLON SIZE AT PLANTING.
- MATERIALS SHALL BE OF HIGH-QUALITY NURSERY GRADE.
- THE USE OF NATIVE, DROUGHT TOLERANT TREES IS ENCOURAGED.
- A REPUTABLE LANDSCAPE CONTRACTOR OR SUPPLIER SHALL PREPARE AN ITEMIZED SCHEDULE OF TREES TO BE INSTALLED IN ACCORDANCE WITH THIS LANDSCAPE PLAN. THIS SCHEDULE SHALL BE REVIEWED BY CURRITUCK COUNTY AND THE ENGINEER TO DETERMINE COMPLIANCE BEFORE ORDERING AND INSTALLATION. ALTERNATE TREES AND SPECIFICATIONS MAY BE PRESENTED FOR REVIEW AND APPROVAL.

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

LANDSCAPING, LIGHTING AND SIGNAGE PLAN

PROJECT: FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

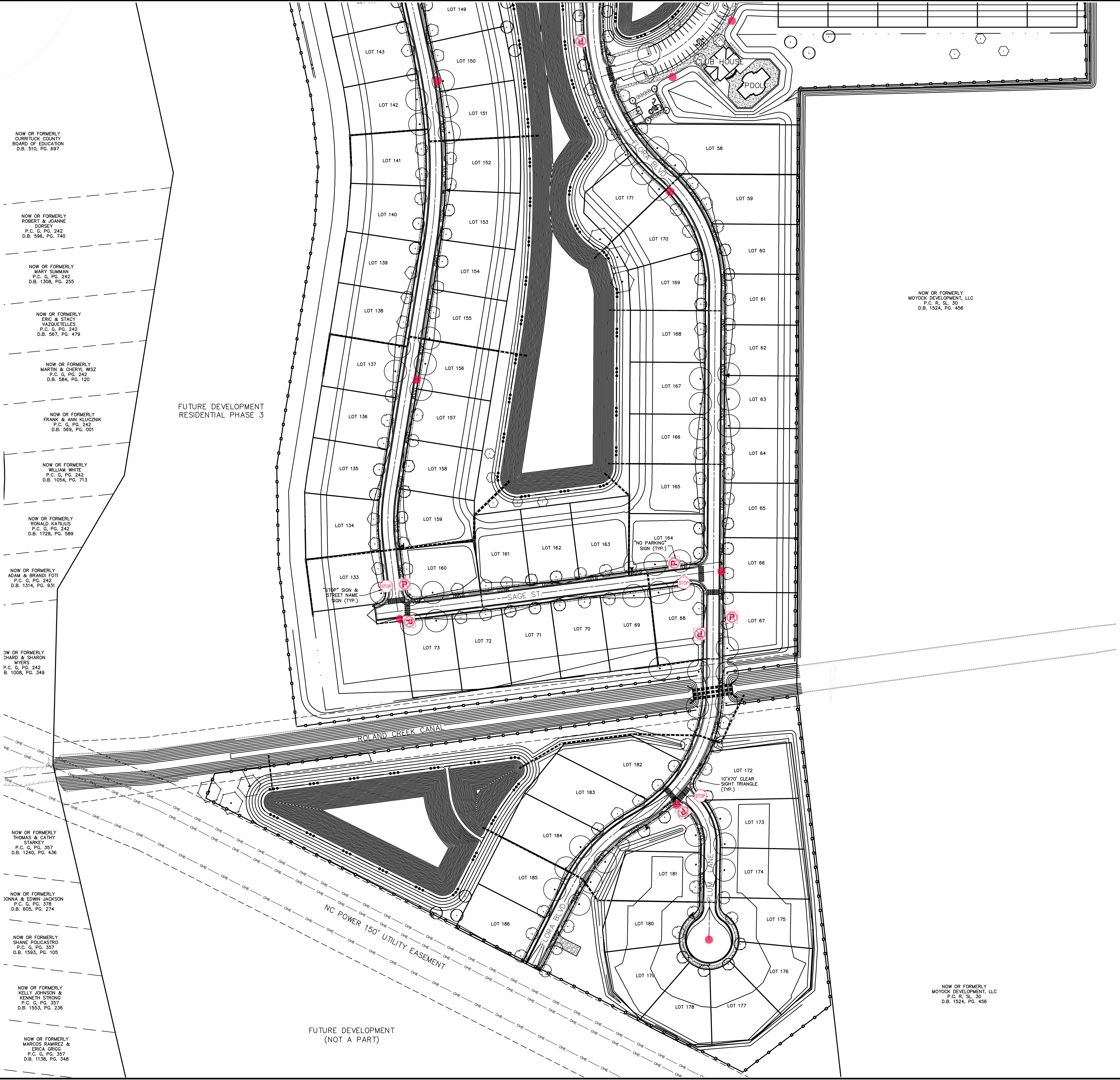
PRELIMINARY DO NOT USE FOR CONSTRUCTION

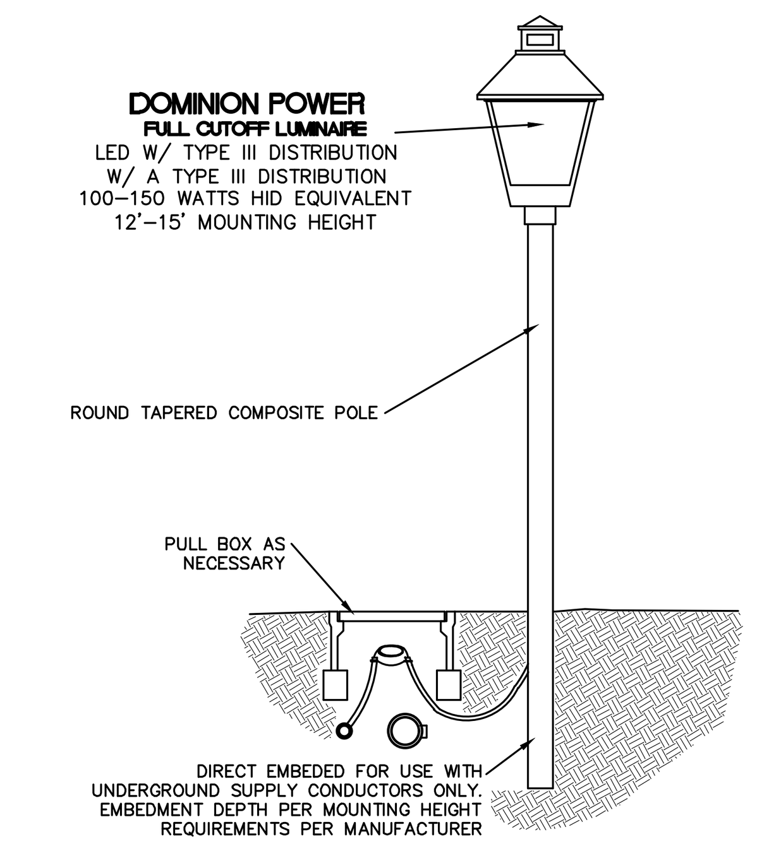
DATE: 4/10/24	SCALE: 1"=100'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 22 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680





TYP. STREET LIGHT DETAIL

NOT TO SCALE LOCATION AS NOTED ON PLAN

LOCATED @ 200'–300' INTERVALS AND AT CROSSWALKS (BOTH SIDES OF DIVIDED BOULEVARDS; AT LEAST ON ONE SIDE OF STANDARD STREETS.)

SIDEWALK, WALKING TRAIL AND MULTI-USE PATH NOTE:
ALL SIDEWALKS, WALKING TRAILS AND MULTI-USE PATHS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT ACCESSIBILITY CODE. WALKS, TRAILS AND PATHS SHALL BE HARD SURFACE WITH CROSS SLOPES NOT EXCEEDING 2% AND LONGITUDINAL SLOPES NOT EXCEEDING 20:1. WALKWAYS LESS THAN 5' IN WIDTH SHALL PROVIDE A 5' WIDE PASSING ZONE EVERY 200'.

STREET SIGN ORDERING INFORMATION / CURRITUCK DEPARTMENT OF PLANNING

SIGN SPECIFICATIONS:
9"WIDE EXTRUDED ALUMINUM BLADE
5"WHITE LETTERS ON GREEN BACKGROUND
PVT DESIGNATION AS REQUIRED (INDICATES "PRIVATE")
STOP SIGNS ARE TO BE 24"IN SIZE.

INSTALLATION:
STREET SIGN POSTS SHALL BE INSTALLED AT LEAST 2 FT. OFF THE EDGE OF PAVEMENT. IT IS RECOMMENDED THAT THE STREET BLADE BE LOCATED 7'-8' ABOVE THE FINISHED GROUND SURFACE. (SEE DETAIL.) INSTALL NO PARKING SIGNS AT ALL FIRE HYDRANTS.

FOR STOP SIGN INSTALLATIONS, PLEASE CONTACT NCDOT MAPLE MAINTENANCE YARD.
STREET NAME AND STOP SIGNS MUST BE INSTALLED PRIOR TO APPROVAL OF PRIVATE ACCESS AND FINAL SUBDIVISIONS.

GRAPHIC SCALE: 100 0 50 100 200 400 — 1" = 100'

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

LANDSCAPING, LIGHTING AND SIGNAGE PLAN

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

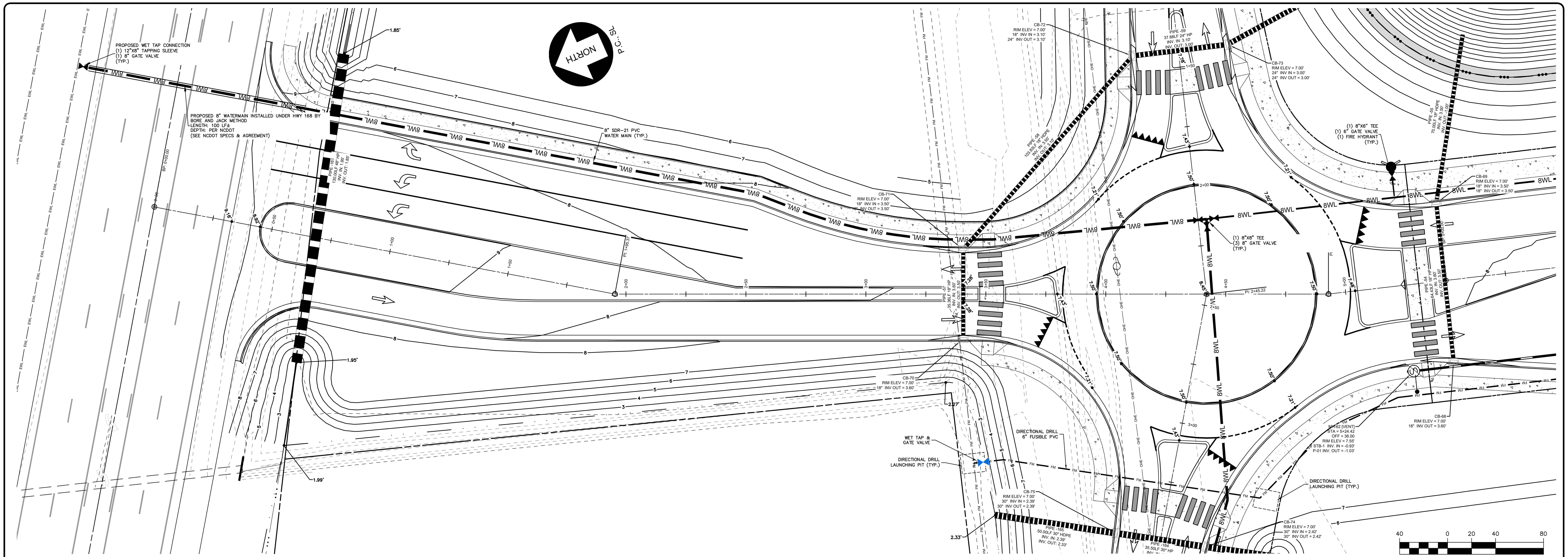
REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: 1"=100'
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

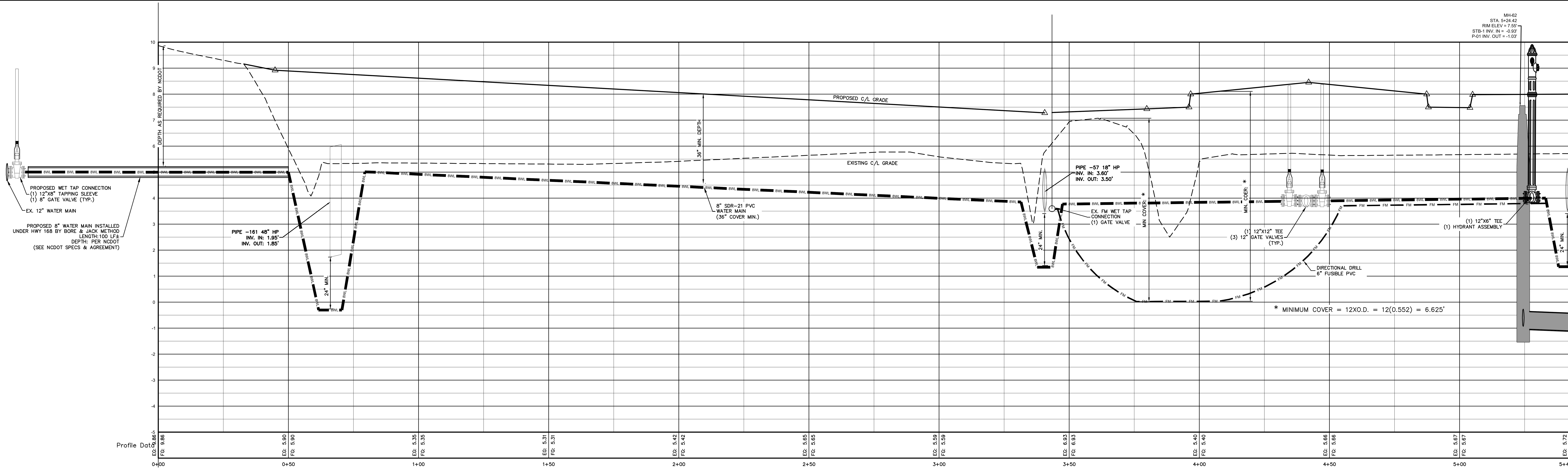
SHEET: 23 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680



ALIGNMENT: SURVEY ROAD REALIGNMENT - PART-1 (STA 0+00 - 5+42)

SCALE: HOR.: 1"=20' (PLAN VIEW)

GRAPHIC SCALE
40 0 20 40 80
1" = 20'



ALIGNMENT: SURVEY ROAD REALIGNMENT - PART-1 (STA 0+00 - 5+42)

SCALE: HOR.: 1"=20', VERT.: 1"=2' (PROFILE VIEW)

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists
Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

SURVEY ROAD REALIGNMENT
PART - 1 PLAN & PROFILE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	9/18/24	DIRECTIONAL DRILL MODIFICATIONS	KFW

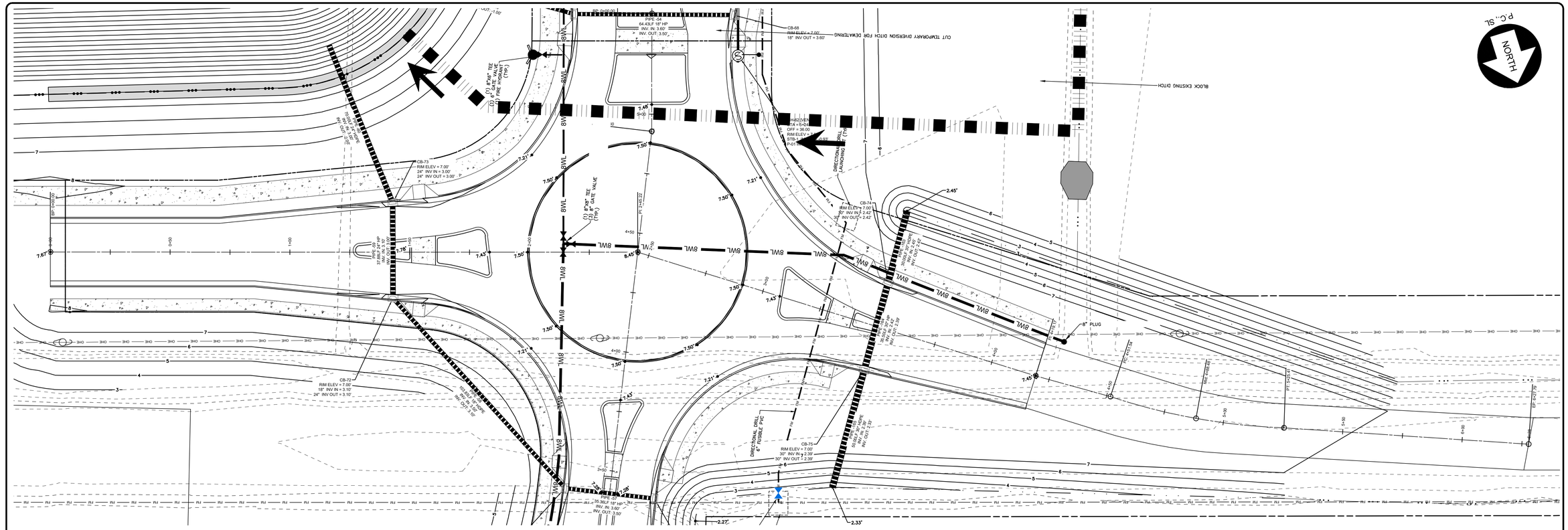
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

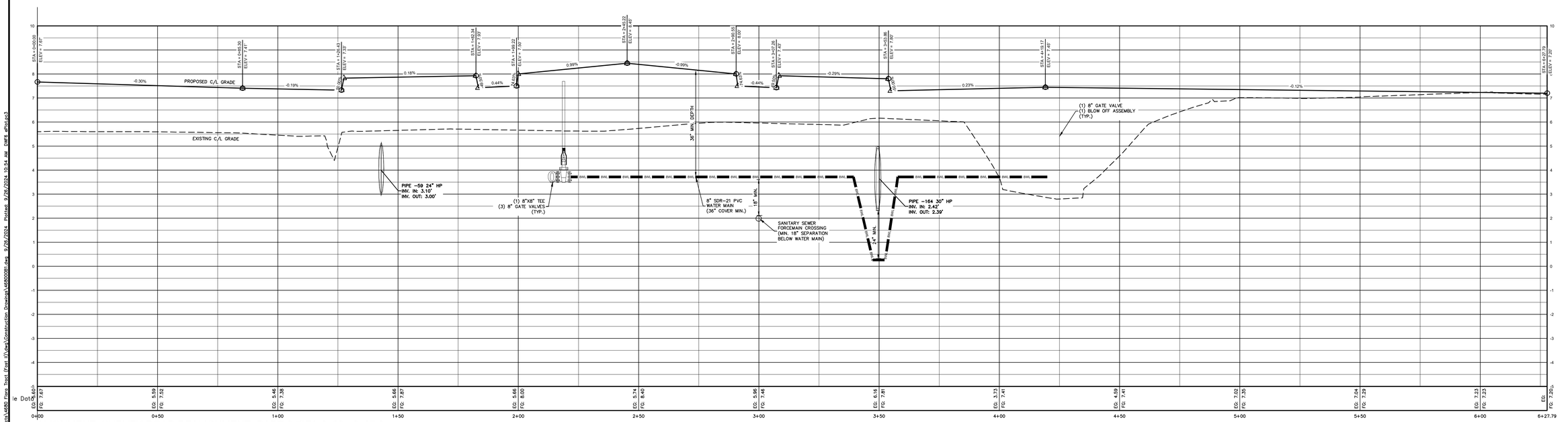
SHEET: 24 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680



ALIGNMENT: SURVEY ROAD REALIGNMENT - PART-2 (STA 0+00 - 6+27.8)
SCALE: HOR.: 1"=20' (PLAN VIEW)



ALIGNMENT: SURVEY ROAD REALIGNMENT- PART-2 (STA 0+00 - 6+27.8)
SCALE: HOR.: 1"=20', VERT.: 1"=2' (PROFILE VIEW)

Bissell Professional Group
Fire Protection Engineering
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
PHONE (252) 261-3300
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors
and Environmental Specialists

SURVEY ROAD REALIGNMENT
PART - 2 PLAN & PROFILE

FLORA FARM PHASES 1 - 2

PROJECT: MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

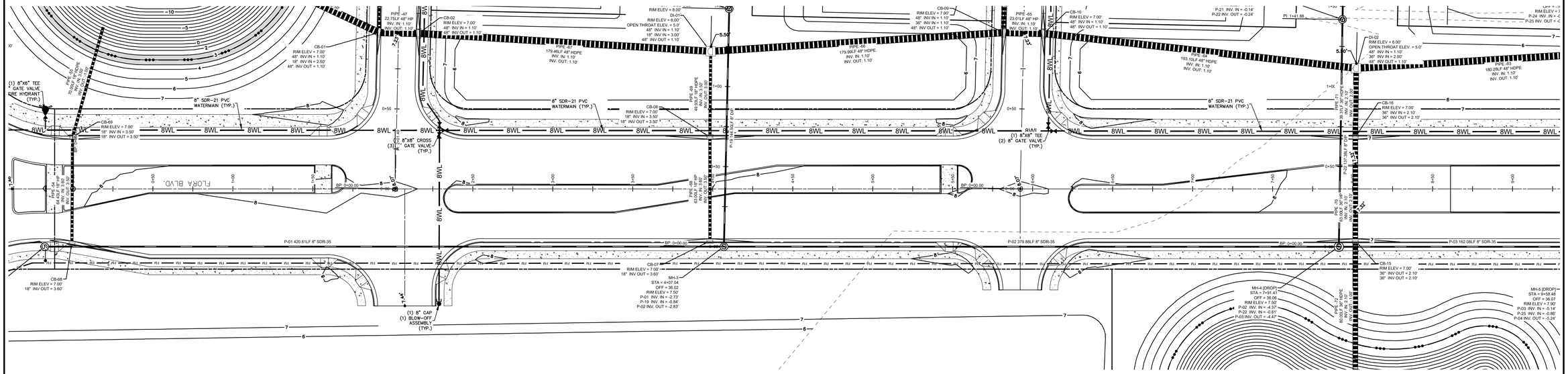
DATE:	SCALE:
4/10/24	AS NOTED
DESIGNED:	CHECKED:
BPG	MSB
DRAWN:	APPROVED:
DMK	MSB

SHEET: 25 OF 49

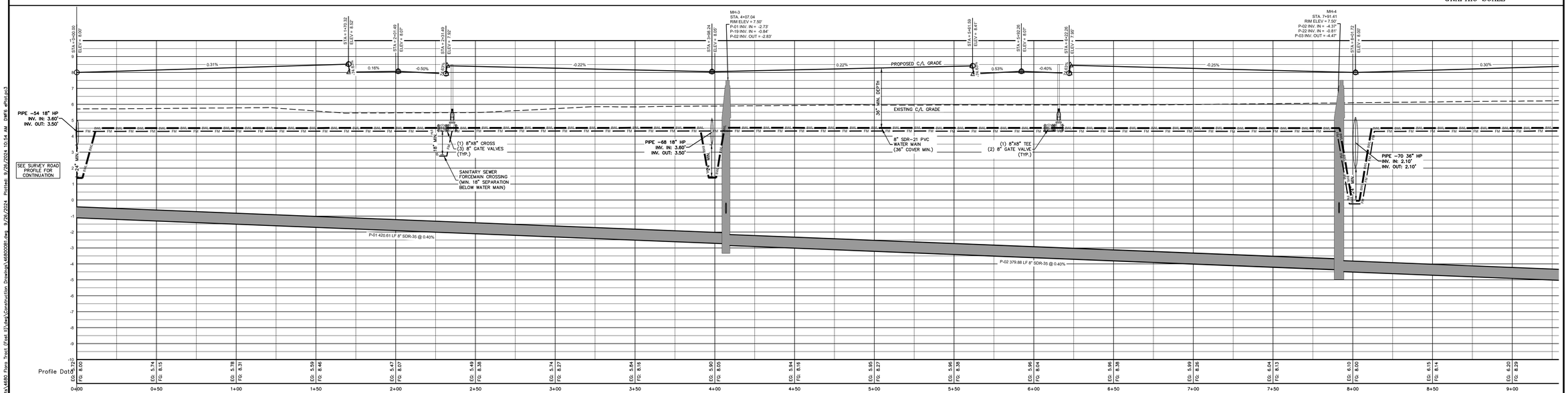
CAD FILE: 468000B1

PROJECT NO: 4680

S:\projects\4680 Flora Tract (East II)\dwg\Construction Drawings\4680008 dwg 9/26/2024 Plotted: 9/26/2024 10:54 AM DWR ePlot.pc3



ALIGNMENT: FLORA BOULEVARD - PART-1 (STA 0+00 - 9+25)
SCALE: HOR.: 1"=30' (PLAN VIEW)



ALIGNMENT: FLORA BOULEVARD - PART-1 (STA 0+00 - 9+25)
SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

S:\projects\4680 Flora Trust (Fost 3)\dwg\Construction Drawings\4680CB1.dwg 9/26/2024 Plotted: 9/26/2024 10:54 AM DMK ePlot.pc3

Bissell Professional Group
Engineering | Surveying
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
P.O. Box 1556
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

FLORA BOULEVARD
PART-1 PLAN & PROFILE

FLORA FARM PHASES 1 - 2

CURRITUCK COUNTY NORTH CAROLINA

MOYOCK

PROJECT:

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

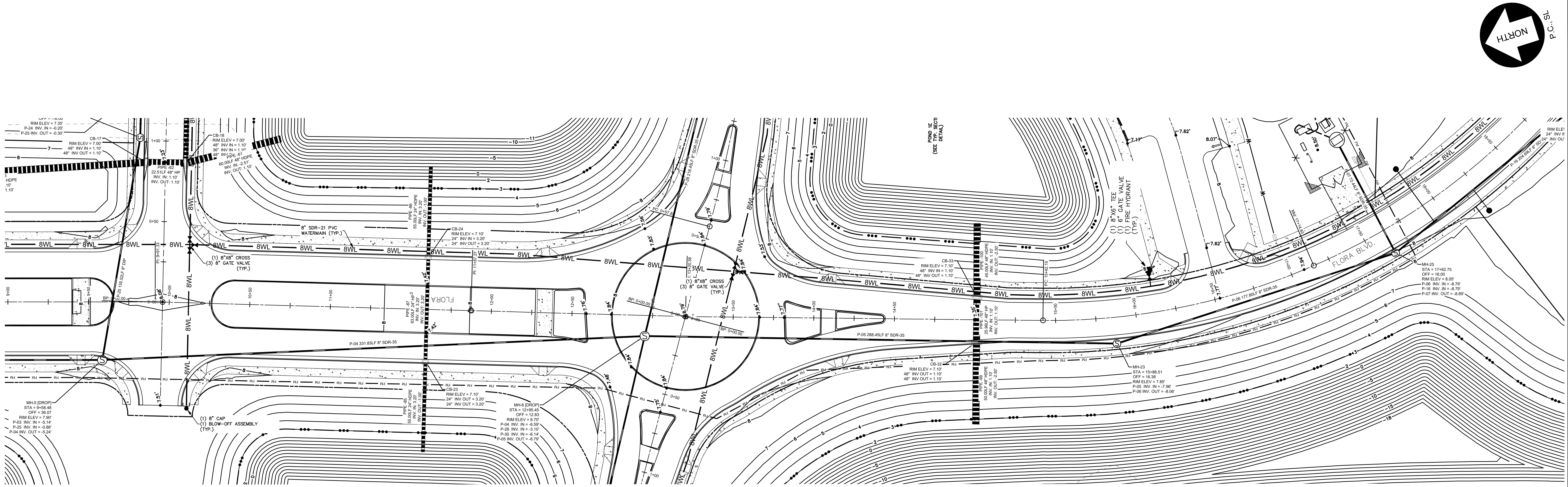
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 26 OF 49

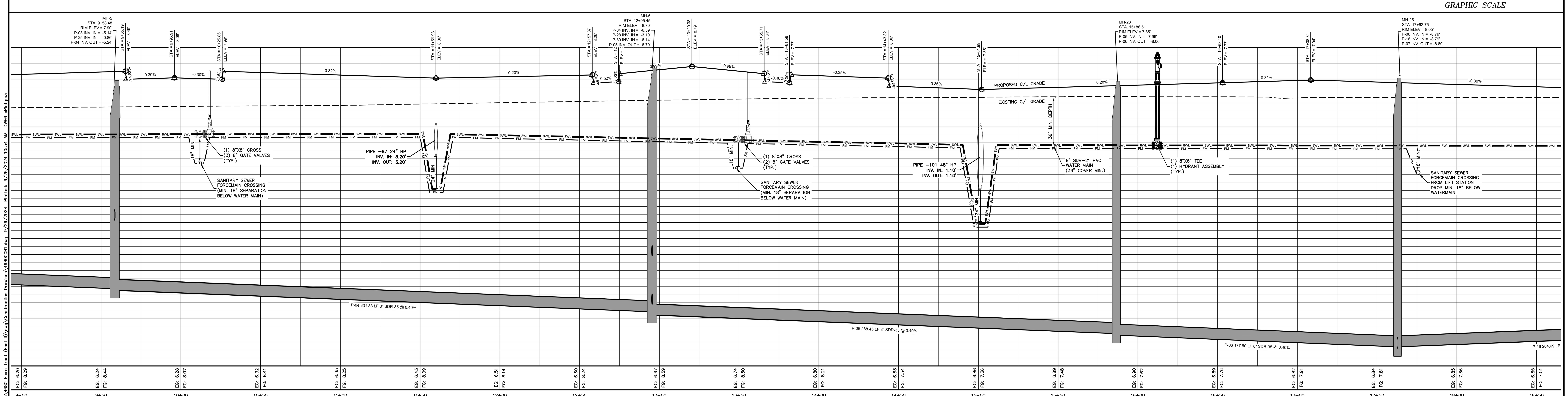
CAD FILE: 468000B1

PROJECT NO: 4680



ALIGNMENT: FLORA BOULEVARD - PART-2 (STA 9+00 - 18+50)

SCALE: HOR.: 1"=30' (PLAN VIEW)



ALIGNMENT: FLORA BOULEVARD - PART-2 (STA 9+00 - 18+50)

SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

FLORA BOULEVARD

PART-2 PLAN & PROFILE

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

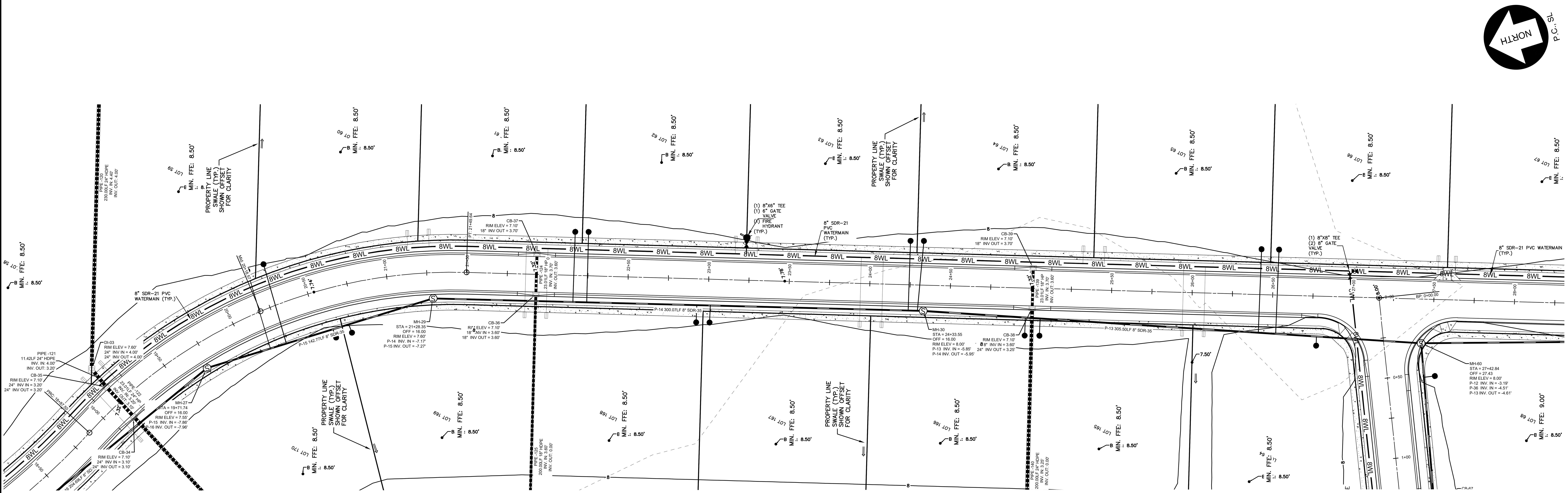
NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

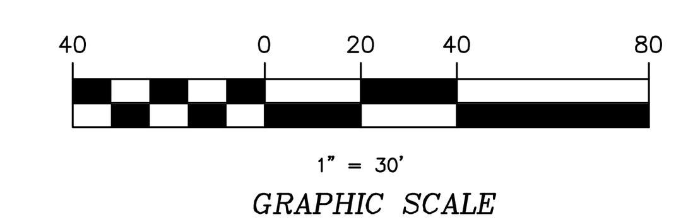
CAD FILE: 468000B1

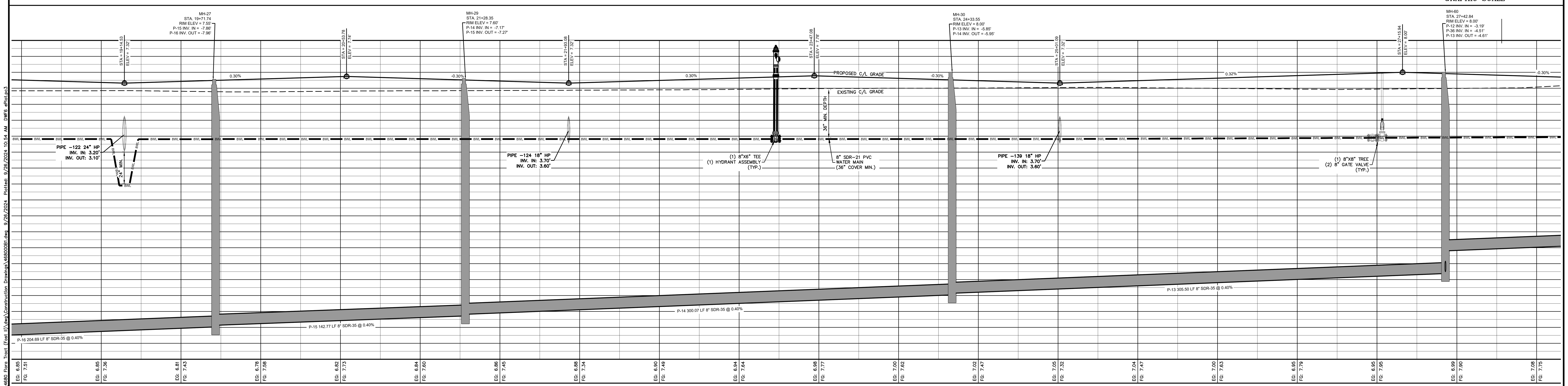
PROJECT NO: 4680



ALIGNMENT: FLORA BOULEVARD - PART-3 (STA 18+50 - 28+00)

SCALE: HOR.: 1"=30' (PLAN VIEW)





ALIGNMENT: FLORA BOULEVARD - PART-3 (STA 18+50 - 28+00)

SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

BISSELL PROFESSIONAL GROUP

Engineers, Planners, Surveyors and Environmental Specialists

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

FLORA BOULEVARD

PART-3 PLAN & PROFILE

PROJECT: FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

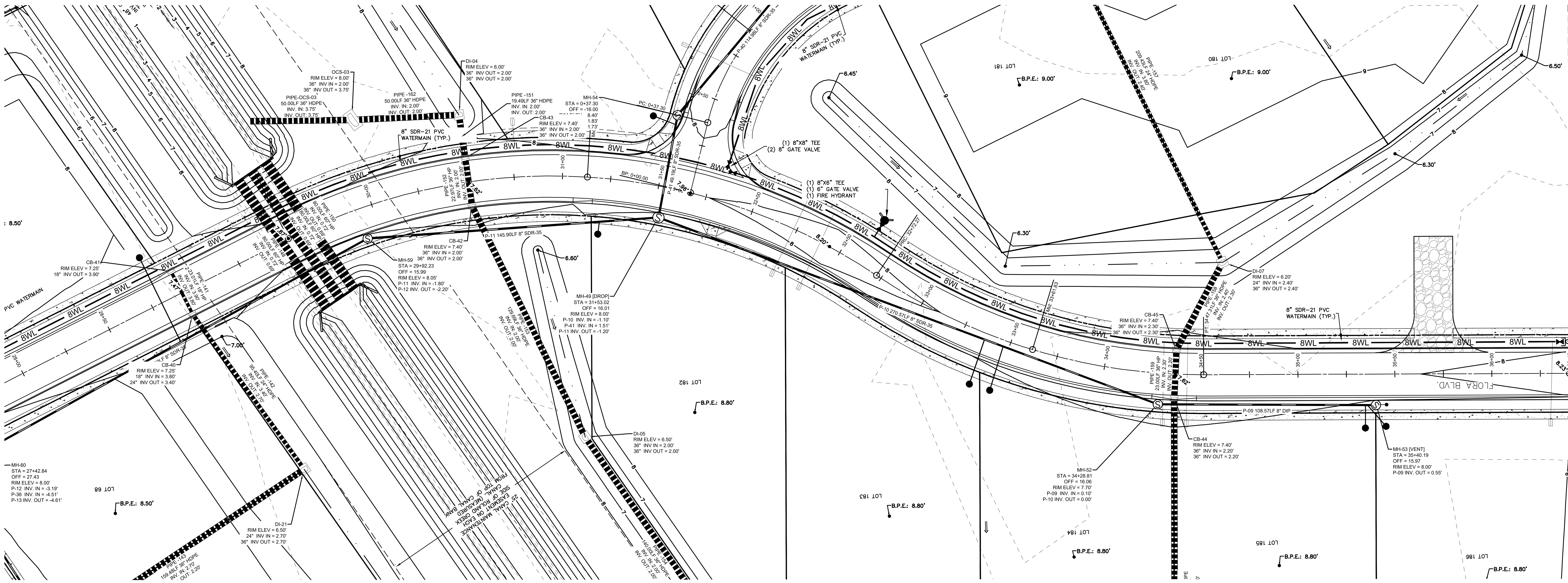
PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 28 OF 49

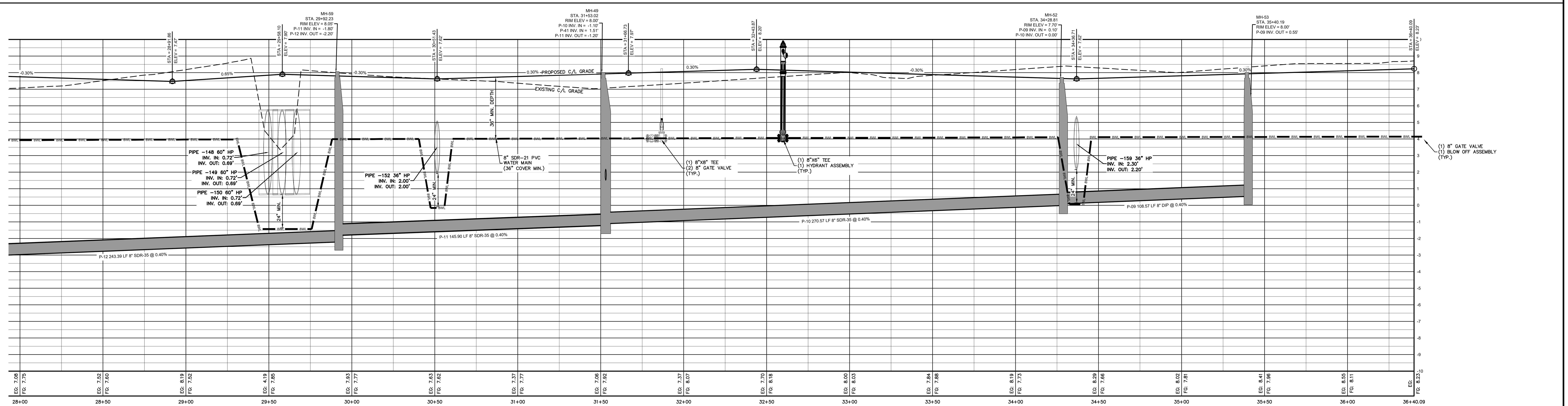
CAD FILE: 468000B1

PROJECT NO: 4680



ALIGNMENT: FLORA BOULEVARD - PART-4 (STA 28+00 - 36+40)

SCALE: HOR.: 1"=30' (PLAN VIEW)



ALIGNMENT: FLORA BOULEVARD - PART-4 (STA 28+00 - 36+40)

SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

BISSELL PROFESSIONAL GROUP
Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
Engineers, Planners, Surveyors and Environmental Specialists

FLORA BOULEVARD
PART-4 PLAN & PROFILE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

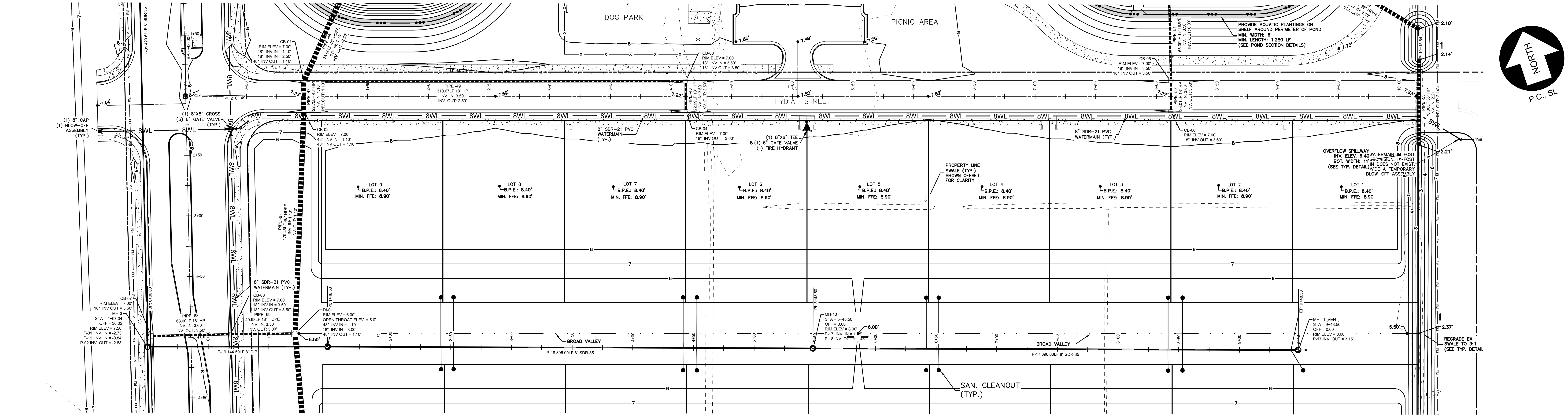
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 29 OF 49

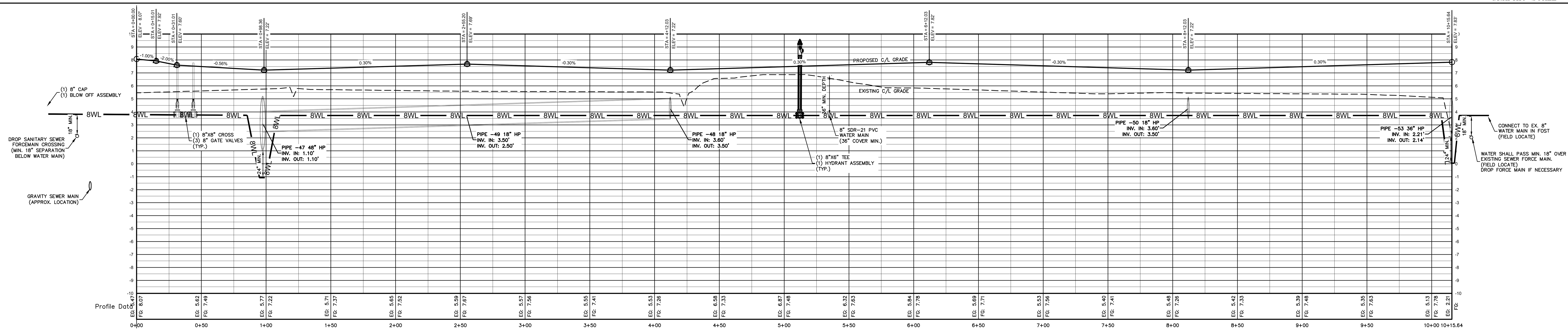
CAD FILE: 468000B1

PROJECT NO: 4680



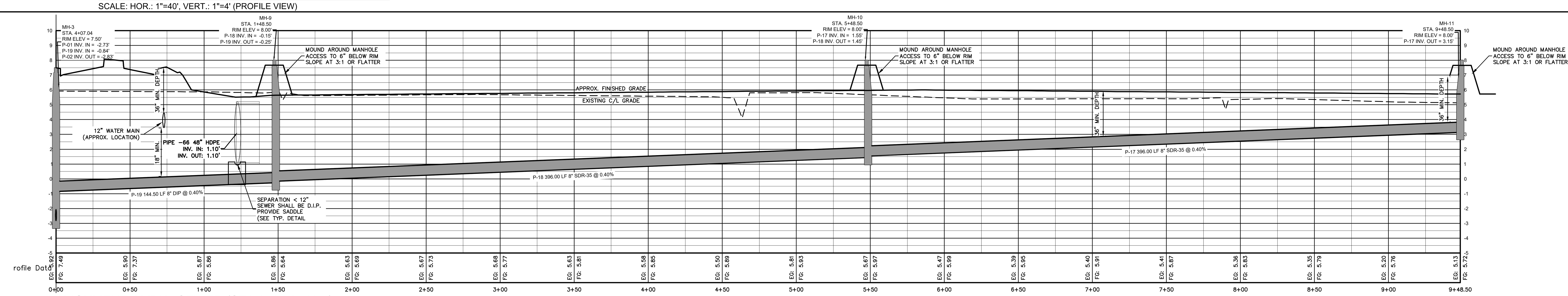
ALIGNMENT: LYDIA STREET (STA 0+00 - 10+15.6)

SCALE: HOR.: 1"=40' (PLAN VIEW)



ALIGNMENT: LYDIA STREET (STA 0+00 - 10+15.6)

SCALE: HOR.: 1"=40', VERT.: 1"=4' (PROFILE VIEW)



ALIGNMENT: LYDIA SEWER (STA 0+0 - 9+48.5)

SCALE: HOR.: 1"=40', VERT.: 1"=4' (PROFILE VIEW)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

LYDIA STREET & SEWER
PLAN & PROFILE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK — CURRITUCK COUNTY — NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

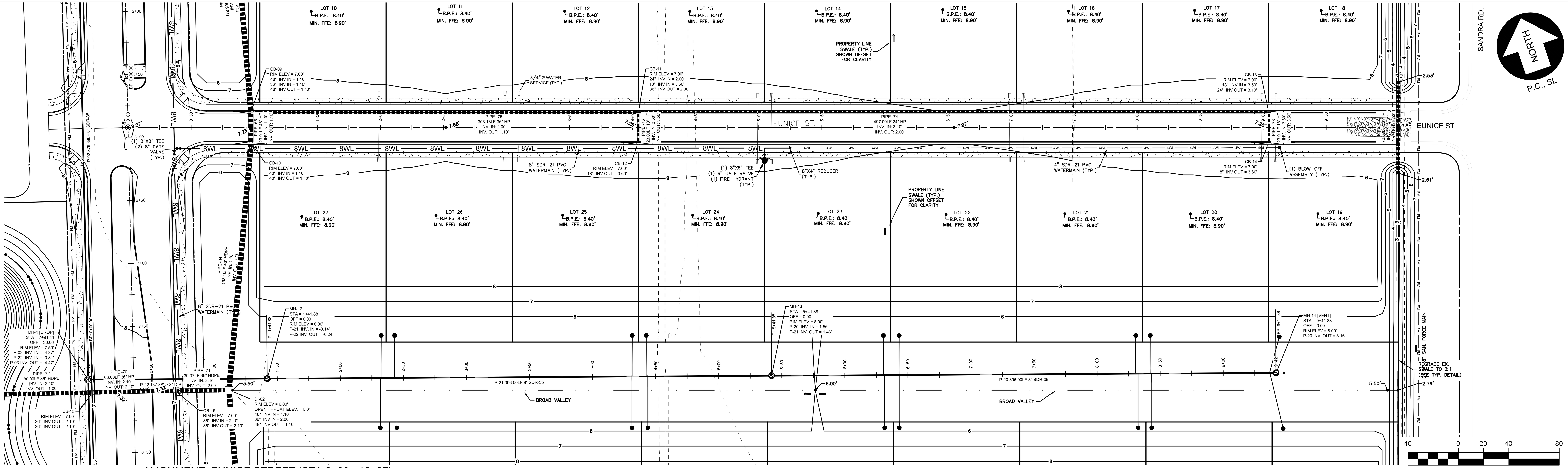
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 30 OF 49

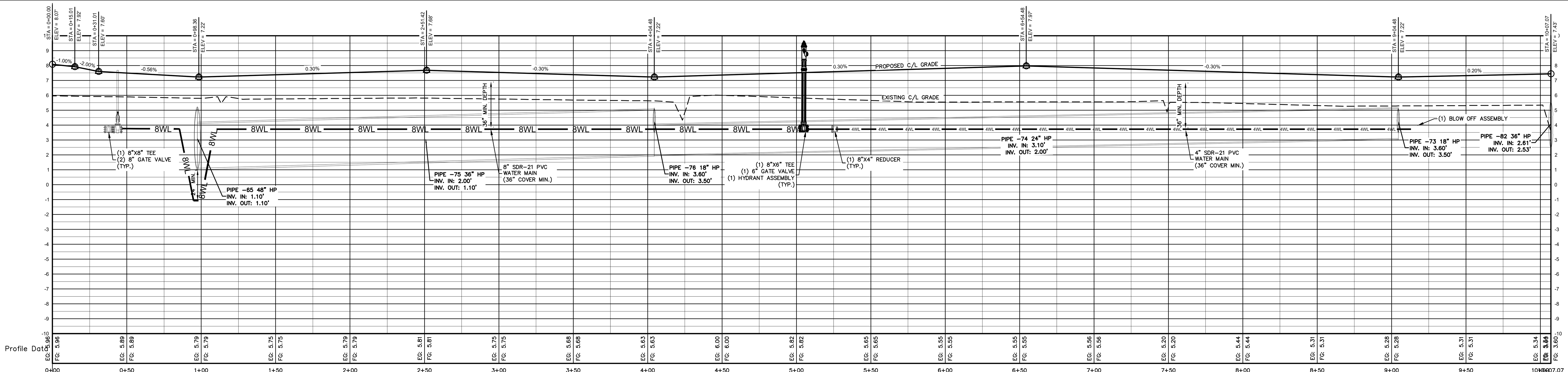
CAD FILE: 468000B1

PROJECT NO: 4680



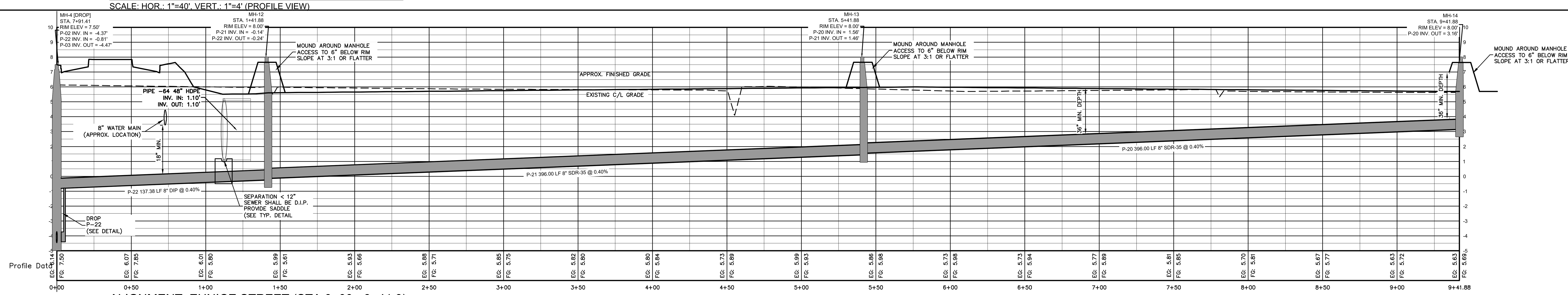
ALIGNMENT: EUNICE STREET (STA 0+00 - 10+07)

SCALE: HOR.: 1"=40' (PLAN VIEW)



ALIGNMENT: EUNICE STREET (STA 0+00 - 10+07)

SCALE: HOR.: 1"=40', VERT.: 1"=4' (PROFILE VIEW)



ALIGNMENT: EUNICE STREET (STA 0+00 - 9+41.9)

SCALE: HOR.: 1"=40', VERT.: 1"=4' (PROFILE VIEW)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

EUNICE STREET & SEWER
PLAN & PROFILE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

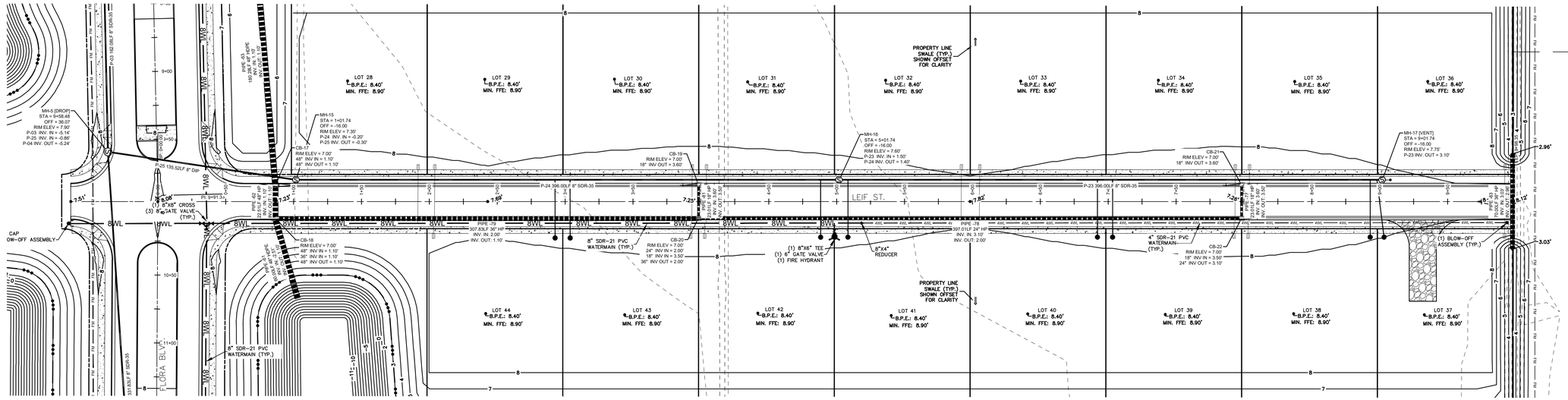
PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 31 OF 49

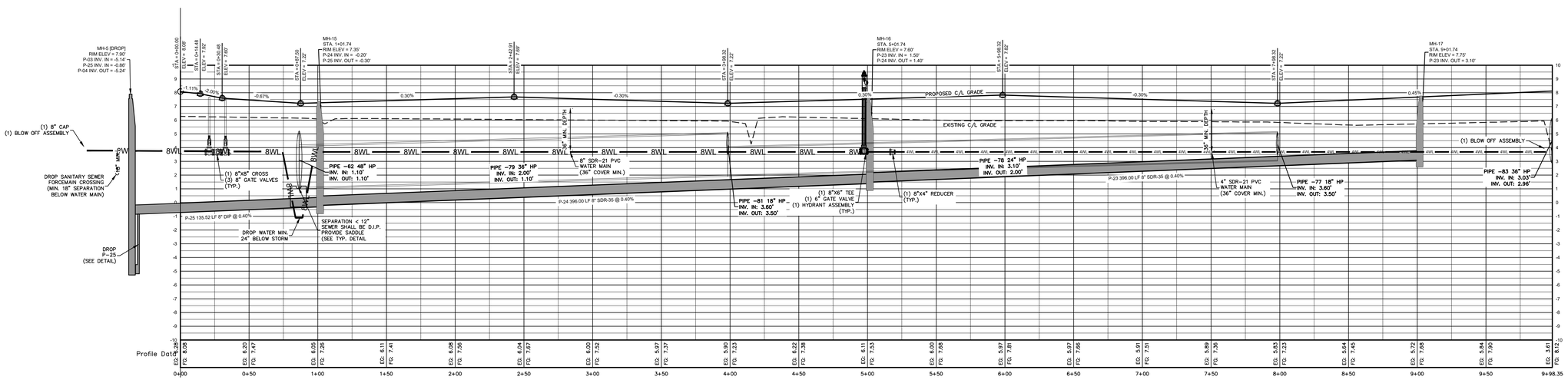
CAD FILE: 468000B1

PROJECT NO: 4680



ALIGNMENT: LEIF STREET (STA 0+00 - 9+98.4)

SCALE: HOR.: 1"=40' (PLAN VIEW)



ALIGNMENT: LEIF STREET (STA 0+00 - 9+98.4)

SCALE: HOR.: 1"=40', VERT.: 1"=4' (PROFILE VIEW)

40 0 20 40 80

1" = 40'

GRAPHIC SCALE

NORTH

P.C., SL

BISSELL PROFESSIONAL GROUP
Bissell Professional Group
Firm License # C-958
353 North Croatan Highway
Kitty Hawk, North Carolina 27949
(252) 261-3016
FAX (252) 261-1760
Engineers, Planners, Surveyors and Environmental Specialists

LEIF STREET
PLAN & PROFILE

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

PROJECT:

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

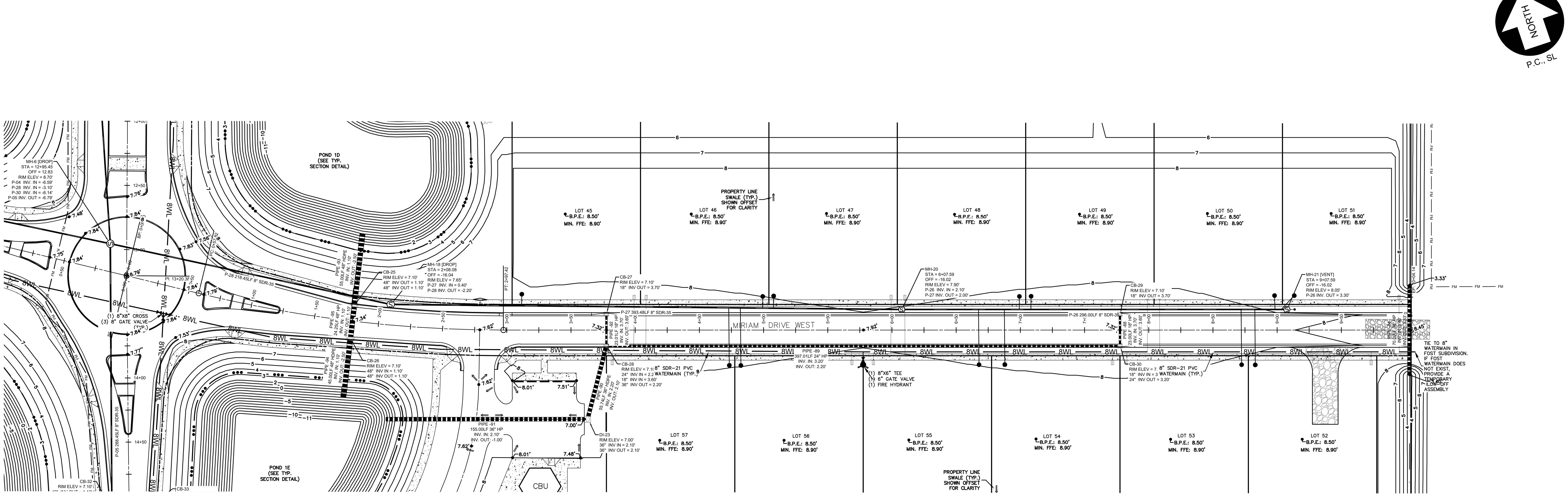
DATE:	SCALE:
4/10/24	AS NOTED
DESIGNED:	CHECKED:
BPG	MSB
DRAWN:	APPROVED:
DMK	MSB

SHEET: 32 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

S:\projects\4680 Flora Trail (Post 1)\dwg\Construction Drawings\4680008.dwg 9/26/2024 Plotted: 9/26/2024 10:55 AM DMK ePlot.pc3

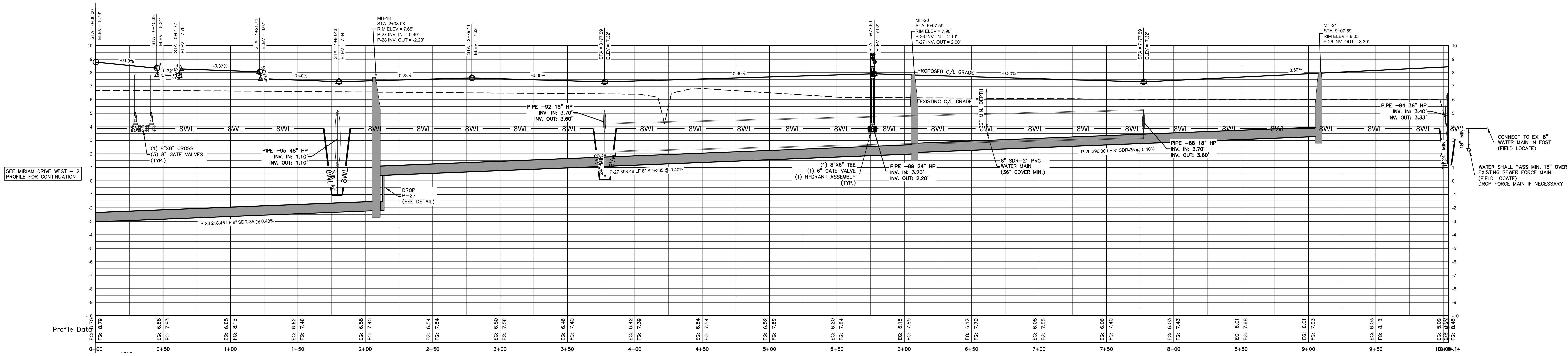


ALIGNMENT: MIRIAM DRIVE WEST - PART-1 (STA 0+00 - 10+04.1)

SCALE: HOR.: 1"=40' (PLAN VIEW)

1" = 40'

GRAPHIC SCALE



ALIGNMENT: MIRIAM DRIVE WEST - PART-1 (STA 0+00 - 10+04.1)

SCALE: HOR.: 1"=40', VERT.: 1"=4' (PROFILE VIEW)

BISSELL PROFESSIONAL GROUP

Bissell Professional Group
Firm License # C-0956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

Engineers, Planners, Surveyors and Environmental Specialists

MIRIAM DRIVE WEST

PART-1 PLAN & PROFILE

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

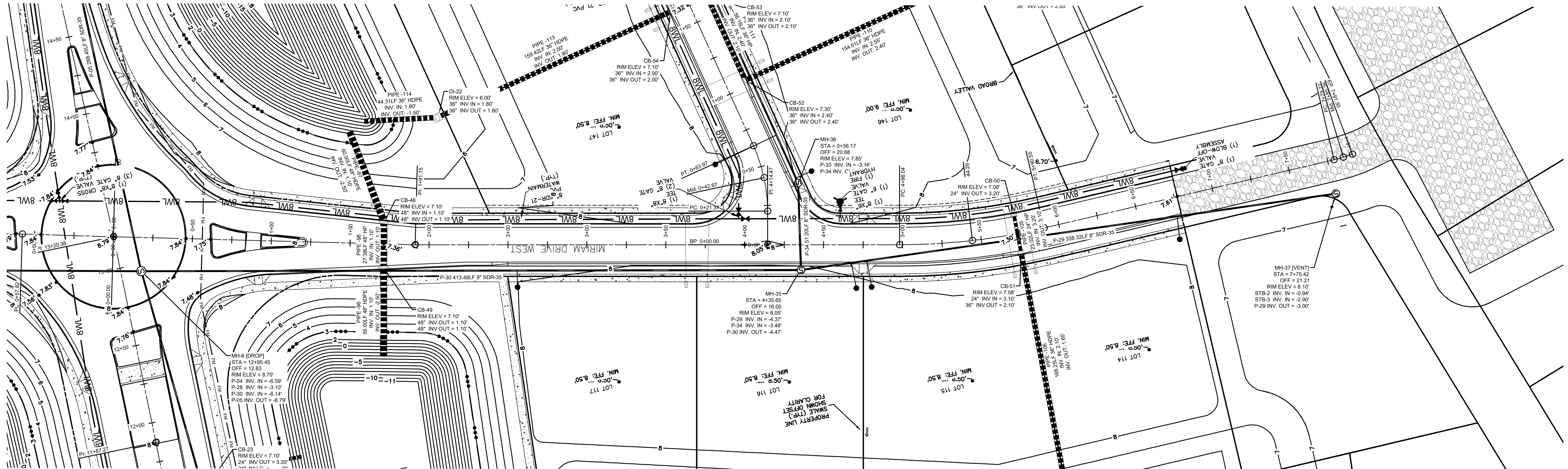
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 33 OF 49

CAD FILE: 468000B1

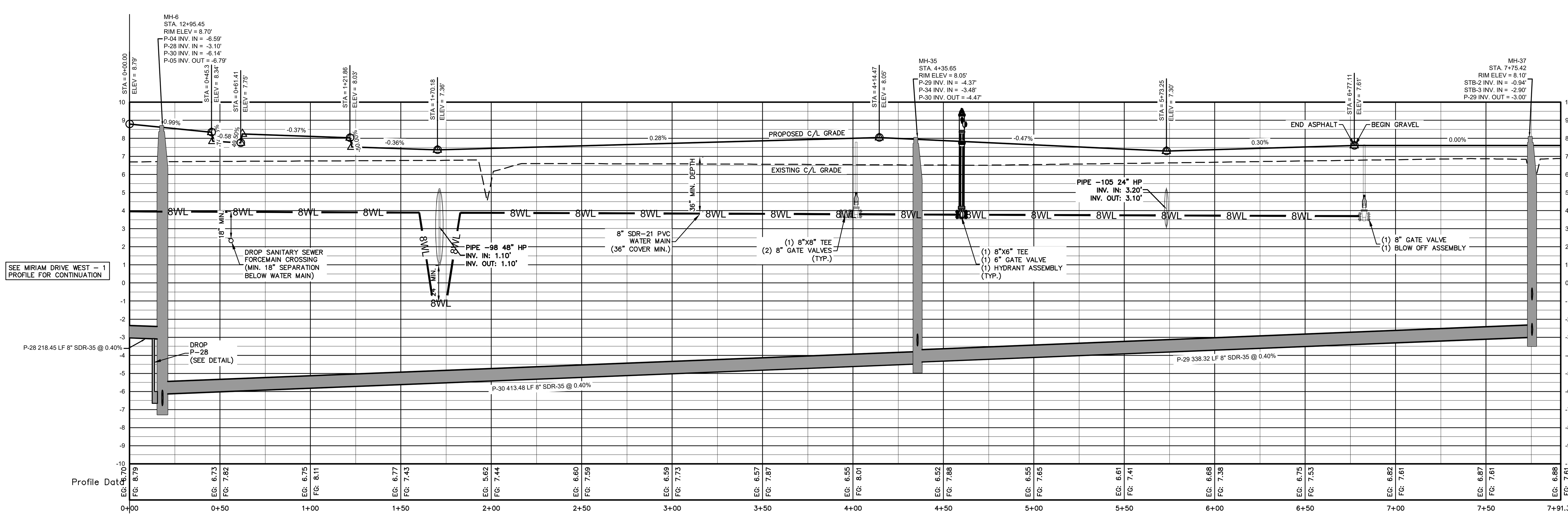
PROJECT NO: 4680



ALIGNMENT: MIRIAM DRIVE WEST - PART-2 (STA 0+00 - 7+91.3)

SCALE: HOR.: 1"=40' (PLAN VIEW)

GRAPHIC SCALE 1" = 40'



ALIGNMENT: MIRIAM DRIVE WEST - PART-2 (STA 0+ 00 - 7+91.3)

SCALE: HOR.: 1"=40', VERT.: 1"=4' (PROFILE VIEW)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
Engineers, Planners, Surveyors and Environmental Specialists

MIRIAM DRIVE WEST

PART-2 PLAN & PROFILE

PROJECT: FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

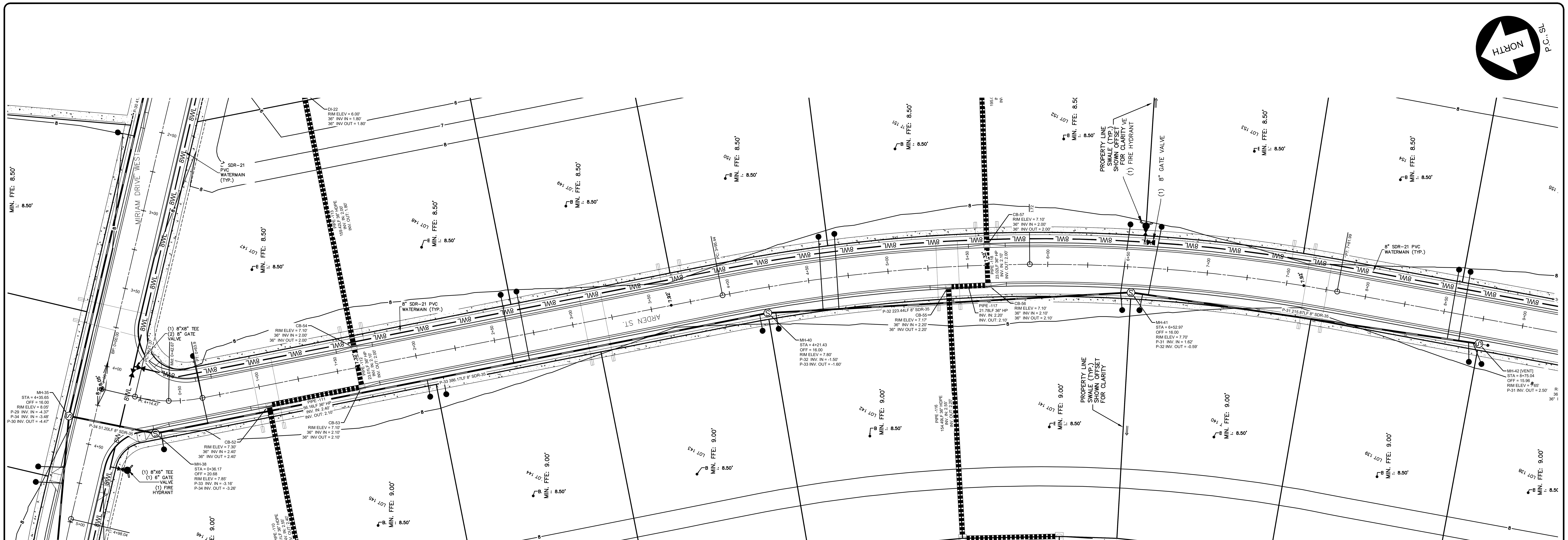
PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 34 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

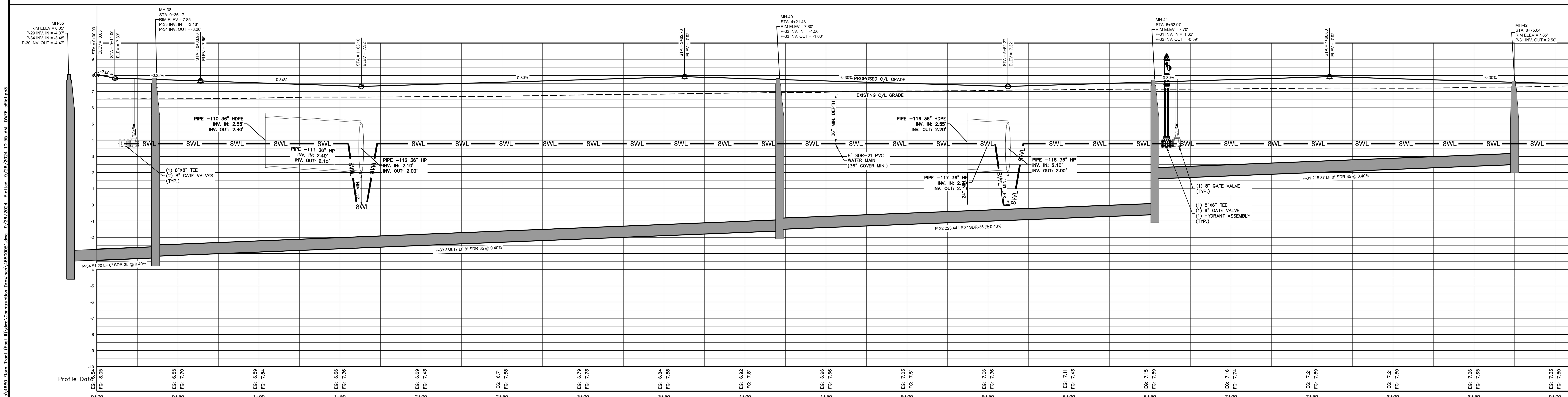


ALIGNMENT: ARDEN STREET - PART-1 (STA 0+00 - 9+00)

SCALE: HOR.: 1"=30' (PLAN VIEW)

1" = 30'

GRAPHIC SCALE



ALIGNMENT: ARDEN STREET - PART-1 (STA 0+00 - 9+00)

SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

BISSELL PROFESSIONAL GROUP

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

Engineers, Planners, Surveyors and Environmental Specialists

ARDEN STREET

PART-1 PLAN & PROFILE

PROJECT: FLORA FARM PHASES 1 - 2

MOYOCK, CURRITUCK COUNTY, NORTH CAROLINA

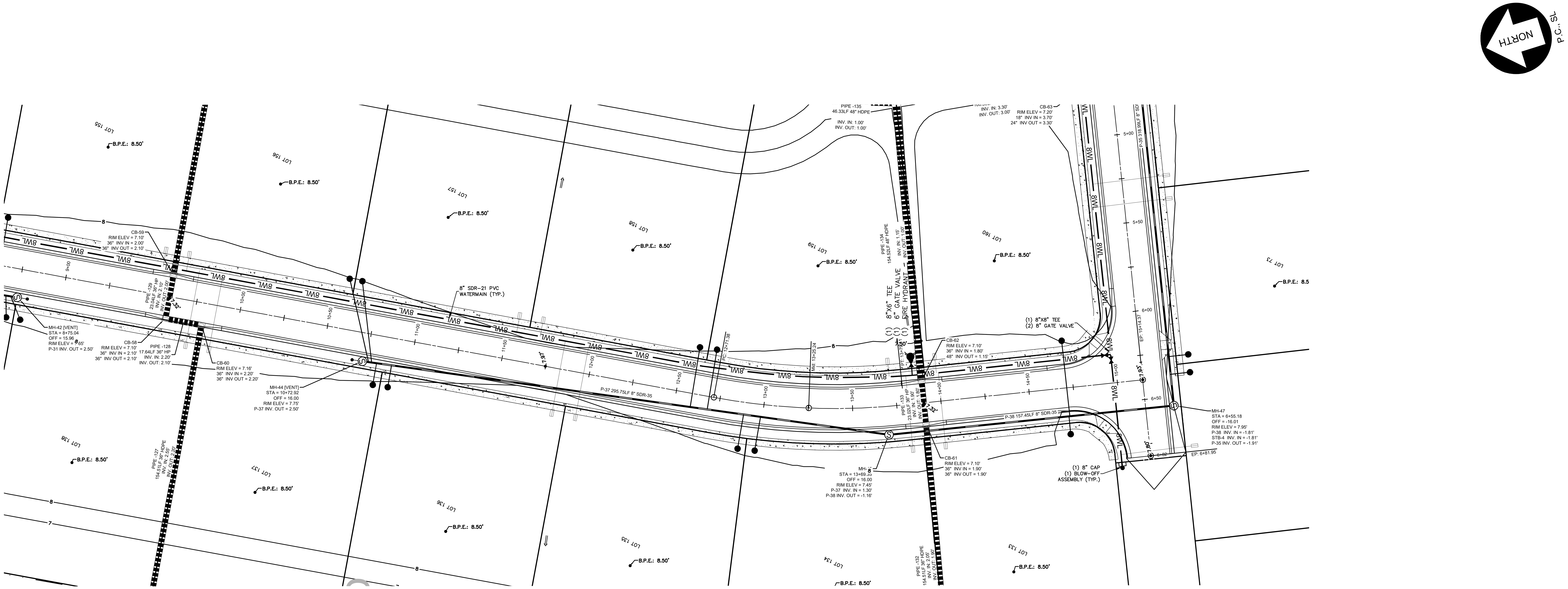
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

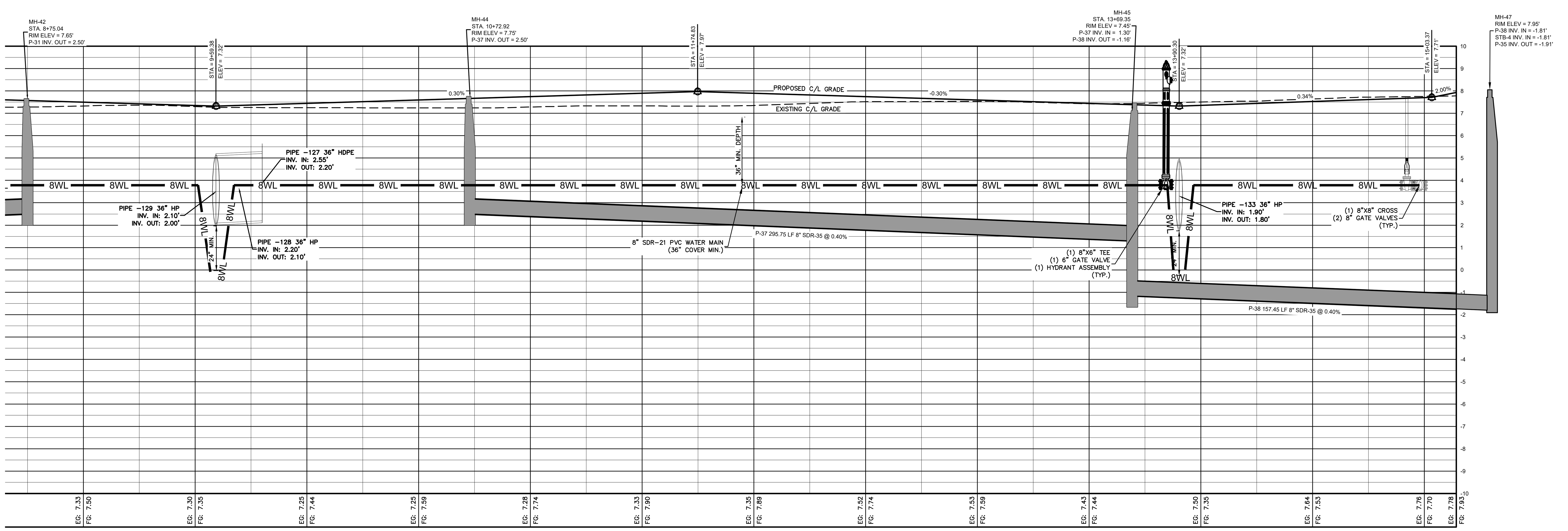
PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB
SHEET: 35 OF 49	
CAD FILE: 468000B1	
PROJECT NO: 4680	



ALIGNMENT: ARDEN STREET - PART-2 (STA 9+00 - 15+14.4)

SCALE: HOR.: 1"=30' (PLAN VIEW)



ALIGNMENT: ARDEN STREET - PART-2 (STA 9+00 - 15+14.4)

SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

ARDEN STREET

PART-2 PLAN & PROFILE

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

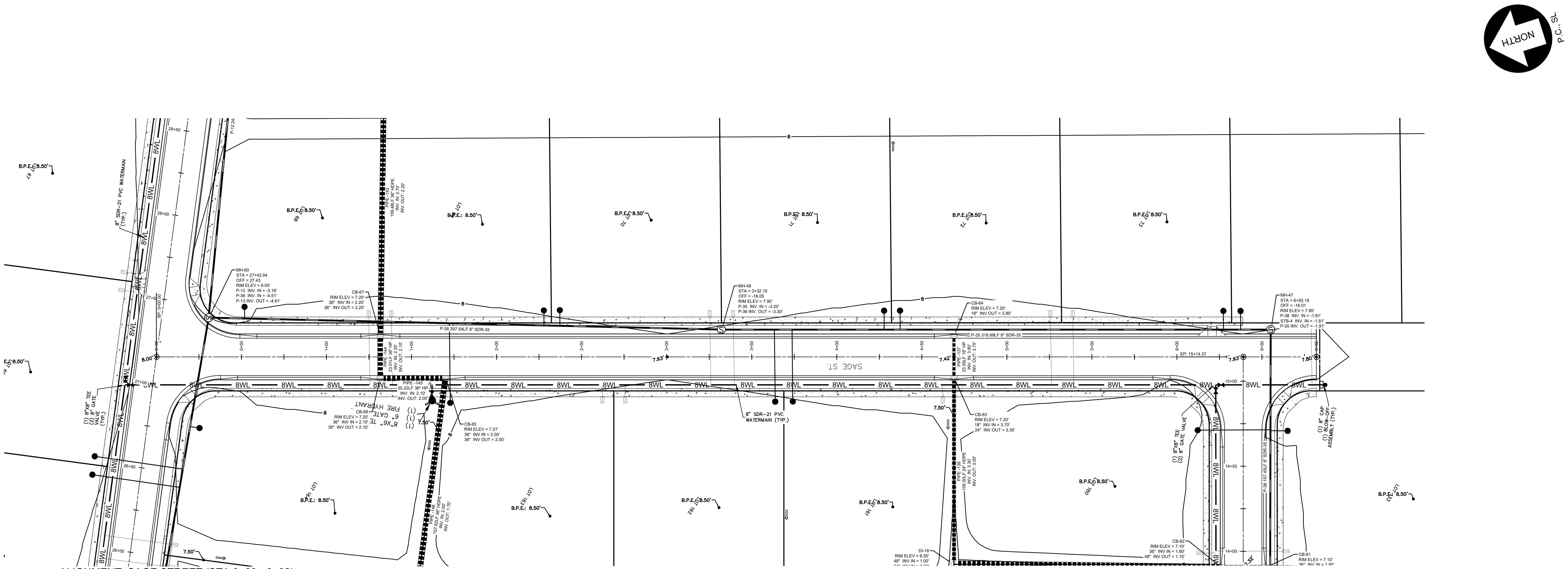
PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 36 OF 49

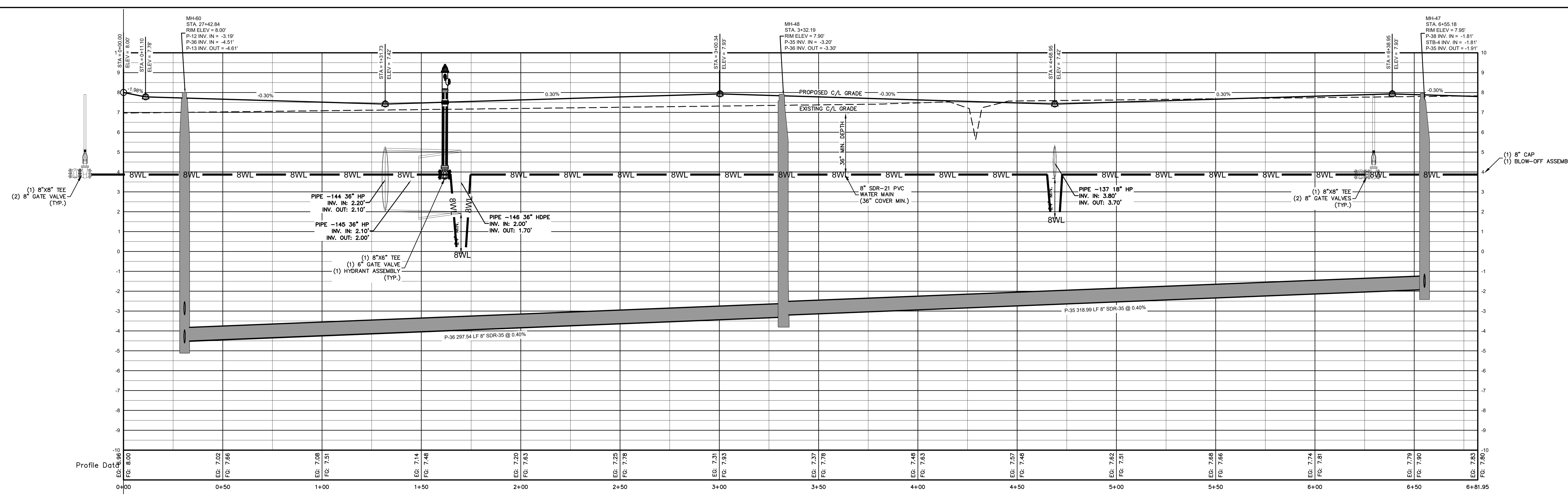
CAD FILE: 468000B1

PROJECT NO: 4680



ALIGNMENT: SAGE STREET (STA 0+00 - 6+82)

SCALE: HOR.: 1"=30' (PLAN VIEW)



ALIGNMENT: SAGE STREE (STA 0+00 - 6+82)

SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

SAGE STREET
PLAN & PROFILE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

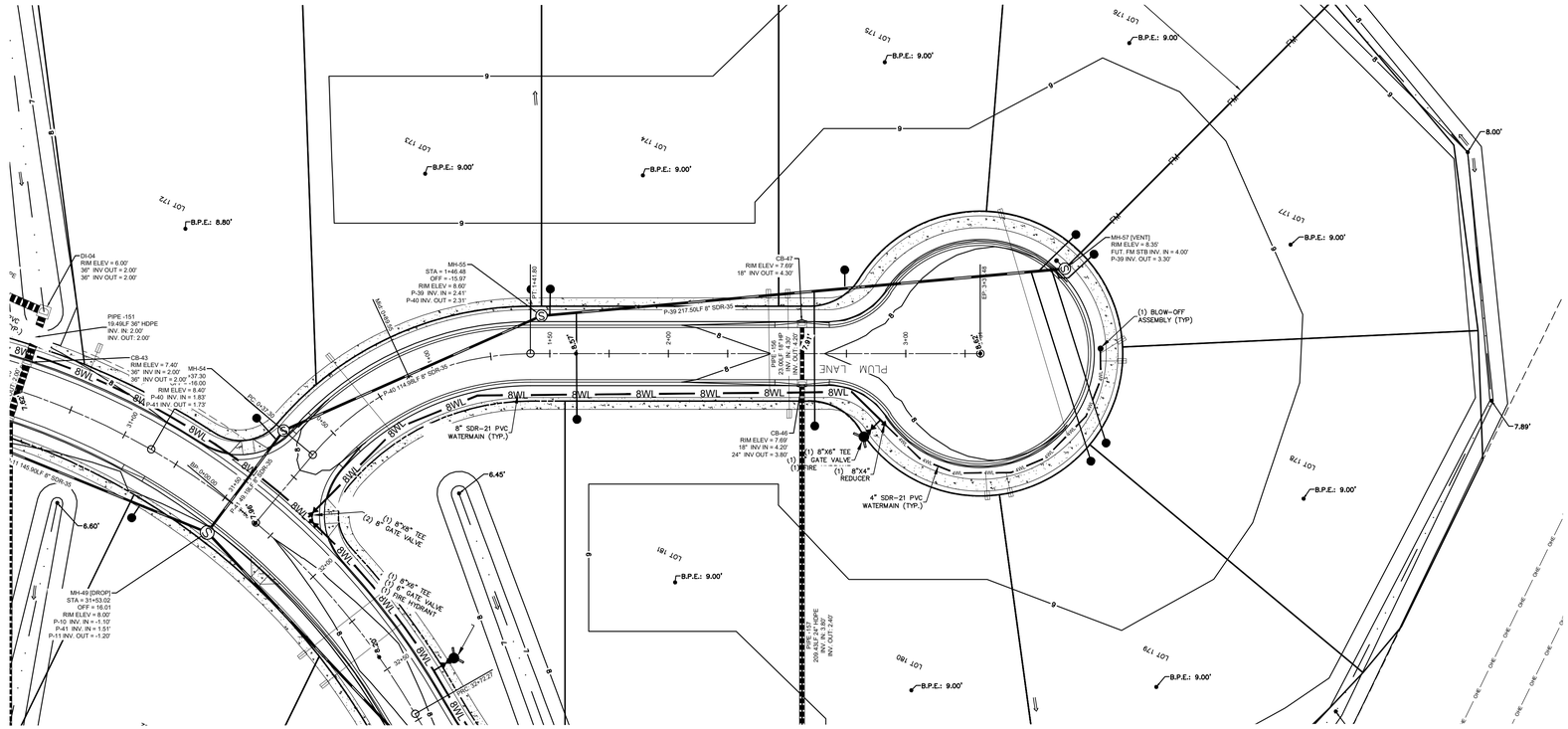
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 37 OF 49

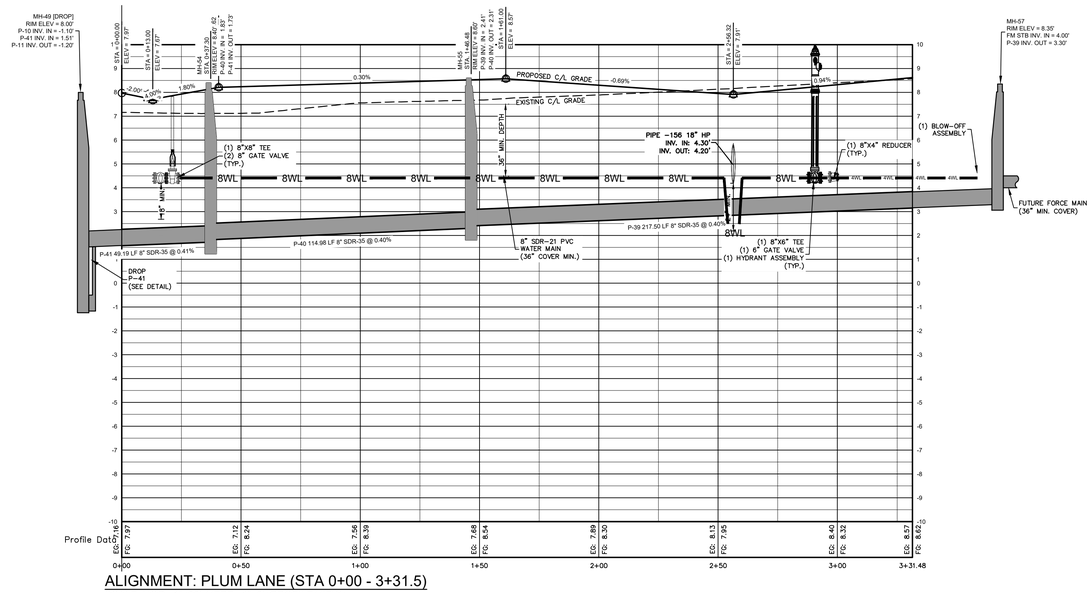
CAD FILE: 468000B1

PROJECT NO.: 4680



ALIGNMENT: PLUM LANE (STA 0+00 - 3+31.5)

SCALE: HOR.: 1"=30' (PLAN VIEW)



ALIGNMENT: PLUM LANE (STA 0+00 - 3+31.5)

SCALE: HOR.: 1"=30', VERT.: 1"=3' (PROFILE VIEW)

40 0 20 40 80

1" = 30'

GRAPHIC SCALE

Bissell Professional Group
Firm License # C-1656
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

PLUM LANE
PLAN & PROFILE

PROJECT:

FLORA FARM PHASES 1 - 2

MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE:	SCALE:
4/10/24	AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 38 OF 49

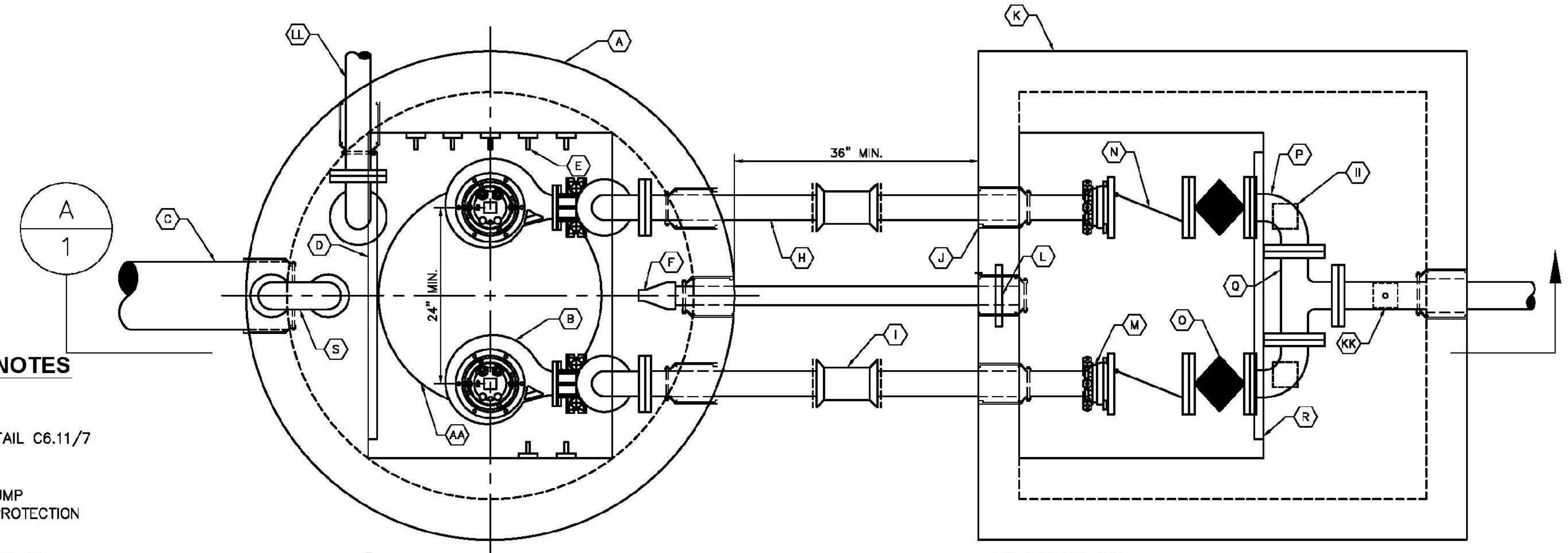
CAD FILE: 4680008B1

PROJECT NO: 4680

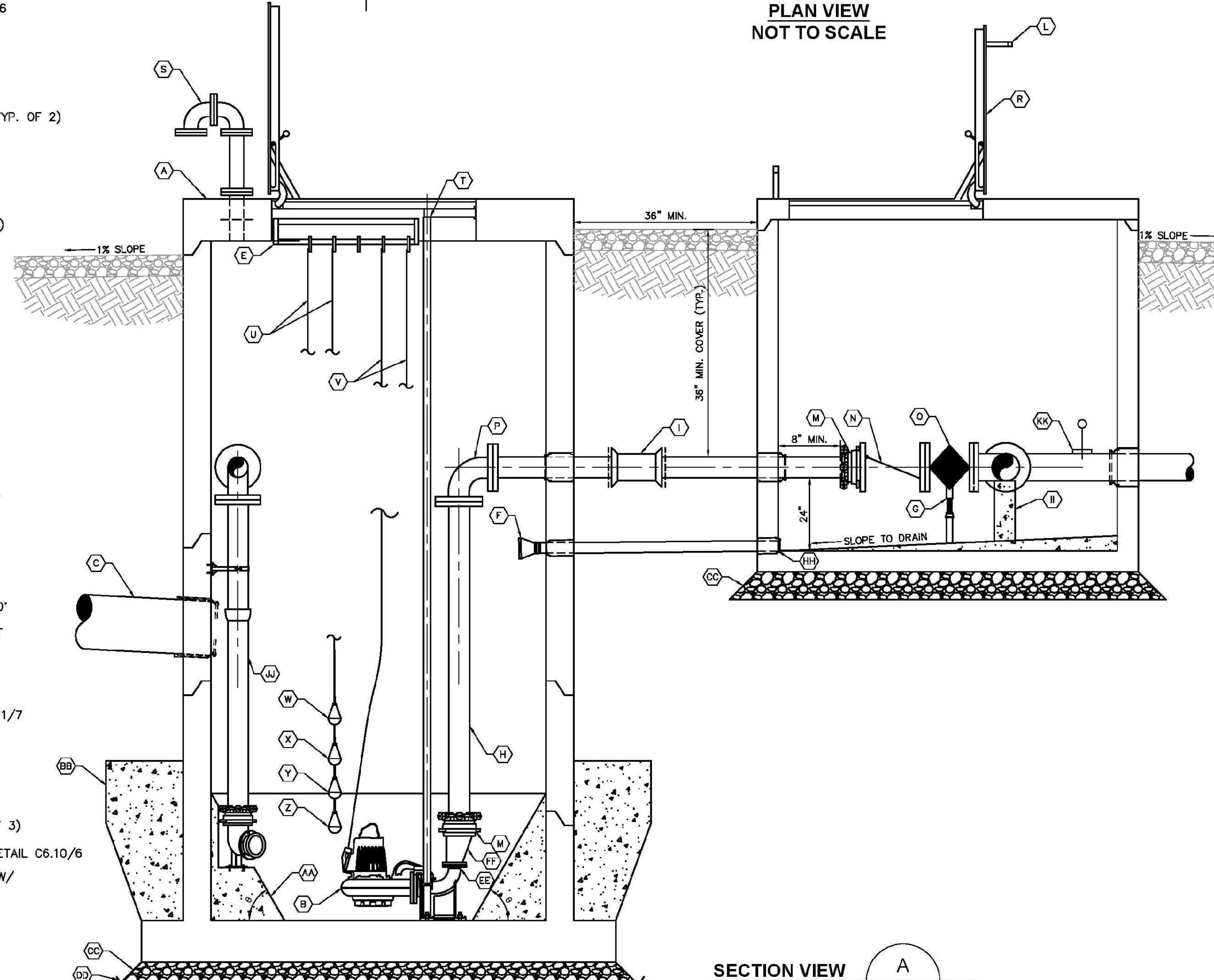
S:\projects\4680 Flora Tract (Fast 9)\dwg\Construction Drawings\4680008B.dwg 9/29/2024 10:59 AM DWG #Plot.pc3

PUMP STATION MECHANICAL KEY NOTES

- (A) 8' DIA PRECAST CONCRETE WET WELL AND TOP WITH INTERIOR LINING
- (B) DUPLEX SUBMERSIBLE SEWAGE PUMPS, SEE DETAIL C6.11/7
- (C) INFLUENT SANITARY GRAVITY SEWER
- (D) ALUMINUM ACCESS HATCH AS REQUIRED BY PUMP MANUFACTURER (MIN. 3'x4'). AL GRATE FALL PROTECTION REQUIRED.
- (E) 316 SST CABLE HOLDER (TYP.), SEE DETAIL C6.11/6
- (F) TIDE FLEX VALVE TF-2
- (G) ADJUSTABLE SADDLE (TYP.), SEE DETAIL C6.11/4
- (H) 6" DI PUMP DISCHARGE PIPING (TYP.)
- (I) 6" DI MJ RESTRAINED LONG BODY SOLID SLEEVE (TYP. OF 2)
- (J) WATERTIGHT BOOT CONNECTION, NO GROUT (TYP.)
- (K) 6'x6' PRECAST CONCRETE VALVE VAULT
- (L) PLASTIC-COATED METAL PULL UP BAR
- (M) 6" RESTRAINED FLANGED COUPLING ADAPTER (TYP.)
- (N) 6" FLG SWING CHECK VALVE (TYP.)
- (O) 6" FLG PLUG VALVE (TYP.)
- (P) 6" FLG 90° BEND (TYP.)
- (Q) 6" FLG TEE (TYP.)
- (R) ALUMINUM ACCESS HATCH (MIN. 3'x4'). AL GRATE FALL PROTECTION REQUIRED.
- (S) 4" DI VENT, SEE DETAIL C6.11/5
- (T) 316 SST UPPER GUIDE BRACKET
- (U) LEVEL CONTROL CABLES (TYP. OF 4)
- (V) SUBMERSIBLE PUMP CABLES (TYP. OF 2)
- (W) HIGH WATER ALARM FLOAT, SEE TABLE THIS SHEET
- (X) LAG PUMP ON FLOAT, SEE TABLE THIS SHEET
- (Y) LEAD PUMP ON FLOAT, SEE TABLE THIS SHEET
- (Z) PUMPS OFF FLOAT, SEE TABLE THIS SHEET
- (AA) WET WELL CHAMFER GROUT, θ SHALL BE 30° TO 60°
- (BB) ANTI-FLOATATION BALLAST, SEE TABLE THIS SHEET
- (CC) 8" #57 STONE (TYP.)
- (DD) GEOTEXTILE FABRIC (TYP.)
- (EE) BASE ELBOW W/ AUTO COUPLING, SEE DETAIL C6.11/7 (TYP. OF 2)
- (FF) FLG 4"x6" ECCENTRIC REDUCER (TYP. OF 2)
- (GG) RESTRAINED FLANGE ADAPTER (TYP. OF 2)
- (HH) 4" SCH 80 PVC DRAIN INVERT FLUSH WITH FLOOR
- (II) CONCRETE SUPPORT, SEE DETAIL C6.11/3 (TYP. OF 3)
- (JJ) EMERGENCY BYPASS PUMPING CONNECTION, SEE DETAIL C6.10/6
- (KK) 1" TAP, SST BALL VALVE, AND PRESSURE GAUGE W/ DIAPHRAGM, SEE DETAIL C6.11/9
- (LL) 6" DI SUCTION PIPING FOR STANDBY DIESEL PUMP



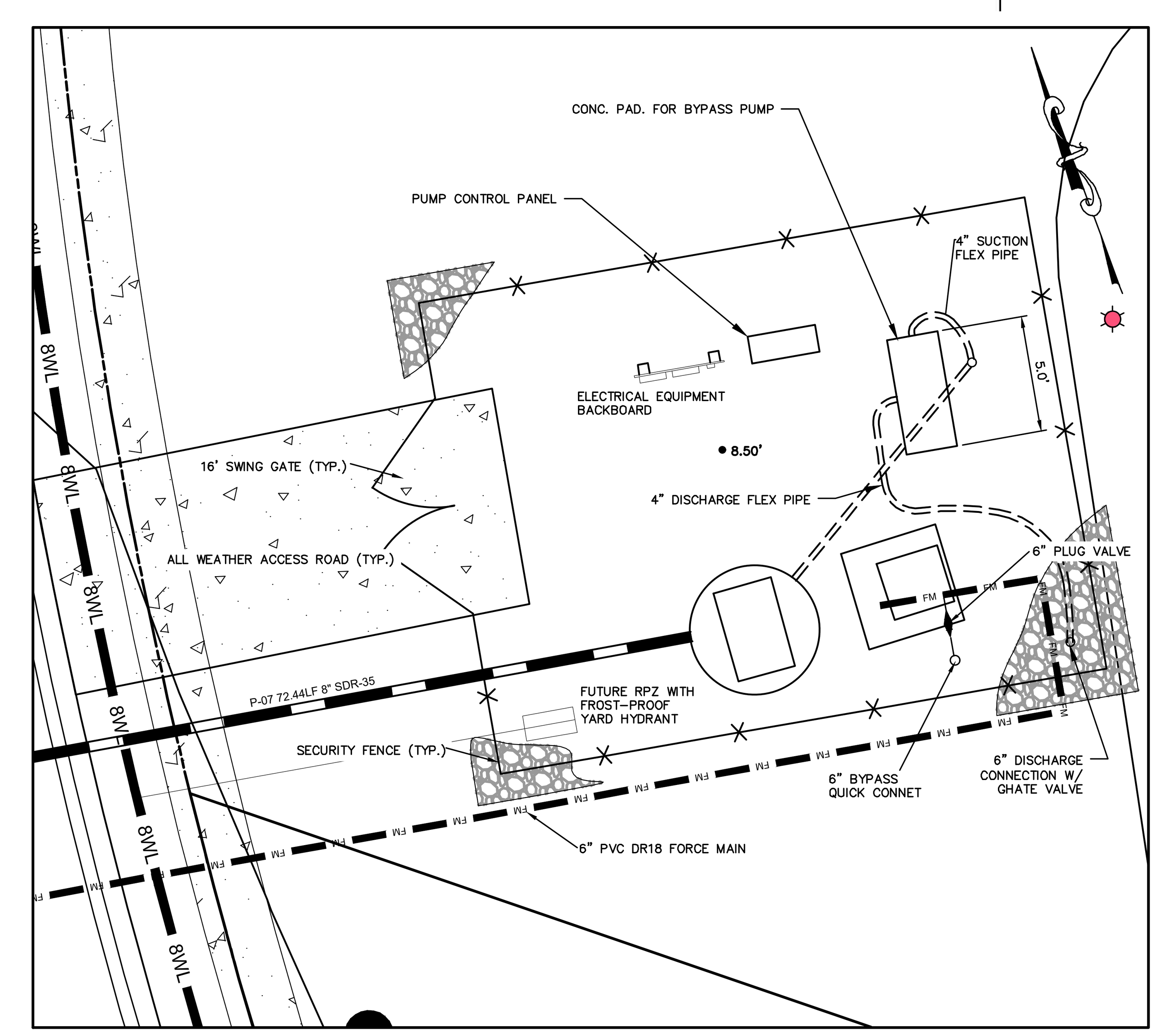
PLAN VIEW
NOT TO SCALE



SECTION VIEW (A/1)
NOT TO SCALE

PUMP STATION GENERAL INFORMATION	
AVERAGE DAILY FLOW	70 GPM
PEAK INFLOW	275 GPM
WETWELL DIAMETER	96"
WETWELL CONCRETE BALLAST REQ'D	10 CY (INSTALLED PER WETWELL MANUFACTURER RECOMMENDATION)
DISCHARGE PIPING	6"Ø DI PC 350
PUMP CURVE POINT #1	0 GPM @ 178' TDH
PUMP CURVE POINT #2	200 GPM @ 155' TDH
PUMP CURVE POINT #3	400 GPM @ 136' TDH
PUMP CURVE POINT #4	800 GPM @ 101' TDH
CALCULATED PUMP OPERATING POINT	511.5 GPM @ 126.4' TDH
ALLOWABLE CURVE DEVIATION	±3% FLOW, ±2% HEAD
HORSEPOWER	30 HP (NON-OVERLOADING OVER ENTIRE PUMP CURVE)
VOLTAGE/PHASE/CYCLES	230 V / 3 PHASE / 60 HZ
MAX. OPERATING SPEED	1750 RPM
PUMP	PENTAIR HYDROMATIC - H4QP
IMPELLER	12"
PRIMARY LEVEL SENSING METHOD	FLOATS (4) W/ INTRINSICALLY-SAFE RELAYS
BACKUP LEVEL SENSING METHOD	N/A
CHECK VALVES	GA LUDLOW LEVER AND WEIGHT
PLUG VALVES	DEZURIK FULL-PORT ECCENTRIC
AIR RELEASE VALVES	ARI D-025 w/ 316 STAINLESS STEEL BODY
GENERATOR RATING	N/A
PUMP STATION ELEVATIONS	
TOP OF WETWELL	9.00 FT MSL
PROPOSED GROUND AT WETWELL	8.50 FT MSL
WETWELL INVERT IN	-9.19 FT MSL
BACKUP HIGH WATER ALARM	N/A
HIGH WATER ALARM	-9.69 FT MSL
LAG PUMP ON	-10.19 FT MSL
LEAD PUMP ON	-10.69 FT MSL
PUMPS OFF	-13.10 FT MSL
LOW WATER ALARM	N/A
WETWELL SUMP	-16.76 FT MSL
SEWER LIFT STATION HYDRAULIC CALCULATIONS	
NEW FORCE MAIN	2080 LF OF 6"Ø DR-18 PVC
EXISTING FORCE MAIN TO DISCHARGE	10333 LF OF 8"Ø PVC
STATIC HEAD	39.2'
PIPING FRICTION LOSS	85.0'
FITTING MINOR LOSS	6.3'
TOTAL FRICTION HEAD	91.3'
CALCULATED TOTAL DYNAMIC HEAD	130.5'

REVISED ELEVATION DATA ON 1-26-24 FOR CONSTRUCTION



LIFT STATION LS-01 SITE PLAN
SCALE: 1"=10' (PLAN VIEW)

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER LIFT STATION
CONSTRUCTION DETAILS

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

CAD FILE: 468000B1
PROJECT NO: 4680

STORMWATER PIPE TABLE

NAME	SIZE	LENGTH	MATERIAL	INV. IN	INV. OUT
PIPE-OCS-01	36"	95.00'	HDPE	3.00'	2.90'
PIPE-OCS-02	24"	70.00'	HDPE	3.00'	2.50'
PIPE-OCS-03	36"	50.00'	HDPE	3.75'	3.75'
PIPE -46	48"	75.00'	HDPE	1.10'	-2.50'
PIPE -47	48"	22.75'	HP	1.10'	1.10'
PIPE -48	18"	22.99'	HP	3.60'	3.50'
PIPE -49	18"	310.67'	HP	3.50'	2.50'
PIPE -50	18"	23.01'	HP	3.60'	3.50'
PIPE -51	18"	65.00'	HDPE	3.50'	0.00'
PIPE -52	36"	100.00'	HDPE	2.10'	-1.00'
PIPE -53	36"	70.00'	HP	2.21'	2.14'
PIPE -54	18"	64.43'	HP	3.60'	3.50'
PIPE -55	18"	70.00'	HDPE	3.50'	-1.00'
PIPE -57	18"	35.36'	HP	3.60'	3.50'
PIPE -58	18"	103.83'	HDPE	3.50'	3.10'
PIPE -59	24"	37.88'	HP	3.10'	3.00'
PIPE -60	24"	70.00'	HDPE	3.00'	-2.00'
PIPE -61	48"	60.00'	HDPE	-2.51'	1.10'
PIPE -62	48"	22.51'	HP	1.10'	1.10'
PIPE -63	48"	180.28'	HDPE	1.10'	1.10'
PIPE -64	48"	193.10'	HDPE	1.10'	1.10'
PIPE -65	48"	23.01'	HP	1.10'	1.10'
PIPE -66	48"	179.99'	HDPE	1.10'	1.10'
PIPE -67	48"	179.46'	HDPE	1.10'	1.10'
PIPE -68	18"	63.00'	HP	3.60'	3.50'
PIPE -69	18"	49.93'	HDPE	3.50'	3.00'
PIPE -70	36"	63.00'	HP	2.10'	2.10'
PIPE -71	36"	39.37'	HDPE	2.10'	2.00'
PIPE -72	36"	80.00'	HDPE	2.10'	-1.00'
PIPE -73	18"	23.01'	HP	3.60'	3.50'
PIPE -74	24"	497.00'	HP	3.10'	2.00'
PIPE -75	36"	303.13'	HP	2.00'	1.10'
PIPE -76	18"	23.00'	HP	3.60'	3.50'
PIPE -77	18"	23.01'	HP	3.60'	3.50'
PIPE -78	24"	397.01'	HP	3.10'	2.00'
PIPE -79	36"	307.83'	HP	2.00'	1.10'
PIPE -81	18"	23.01'	HP	3.60'	3.50'
PIPE -82	36"	72.00'	HP	2.61'	2.53'
PIPE -83	36"	70.00'	HP	3.03'	2.96'
PIPE -84	36"	70.00'	HP	3.40'	3.33'
PIPE -85	24"	55.00'	HDPE	3.20'	-1.00'
PIPE -86	24"	55.00'	HDPE	3.20'	-1.00'
PIPE -87	24"	63.00'	HP	3.20'	3.20'
PIPE -88	18"	23.00'	HP	3.70'	3.60'
PIPE -89	24"	397.01'	HP	3.20'	2.20'
PIPE -90	36"	55.74'	HDPE	2.20'	2.10'
PIPE -91	36"	155.00'	HP	2.10'	-1.00'
PIPE -92	18"	23.01'	HP	3.70'	3.60'
PIPE -93	48"	55.00'	HDPE	1.10'	-2.50'
PIPE -94	48"	45.00'	HDPE	1.10'	-2.50'
PIPE -95	48"	24.25'	HP	1.10'	1.10'
PIPE -96	48"	55.00'	HDPE	1.10'	-2.50'
PIPE -97	48"	60.00'	HDPE	1.10'	-2.50'
PIPE -98	48"	27.38'	HP	1.10'	1.10'
PIPE -99	48"	50.00'	HDPE	1.10'	-2.50'
PIPE -100	48"	45.00'	HDPE	1.10'	-2.50'
PIPE -101	48"	25.96'	HP	1.10'	1.10'
PIPE -102	48"	76.55'	HDPE	1.10'	1.00'
PIPE -103	48"	40.20'	HDPE	1.00'	0.90'
PIPE -104	48"	345.00'	HDPE	0.90'	-2.50'
PIPE -105	24"	23.02'	HP	3.20'	3.10'

STORMWATER PIPE TABLE

NAME	SIZE	LENGTH	MATERIAL	INV. IN	INV. OUT
PIPE -106	36"	168.25'	HDPE	2.10'	1.65'
PIPE -107	36"	39.50'	HDPE	2.15'	2.10'
PIPE -108	24"	19.50'	HDPE	2.15'	2.10'
PIPE -109	36"	35.77'	HDPE	2.65'	2.55'
PIPE -110	36"	154.51'	HDPE	2.55'	2.40'
PIPE -111	36"	56.16'	HP	2.40'	2.10'
PIPE -112	36"	23.01'	HP	2.10'	2.00'
PIPE -113	36"	159.42'	HDPE	2.00'	1.80'
PIPE -114	36"	44.31'	HDPE	1.80'	-1.50'
PIPE -115	36"	56.44'	HDPE	2.65'	2.55'
PIPE -116	36"	154.49'	HDPE	2.55'	2.20'
PIPE -117	36"	21.78'	HP	2.20'	2.10'
PIPE -118	36"	23.02'	HP	2.10'	2.00'
PIPE -119	36"	195.00'	HDPE	2.00'	-1.50'
PIPE -120	24"	230.00'	HDPE	4.40'	4.00'
PIPE -121	24"	11.42'	HDPE	4.00'	3.20'
PIPE -122	24"	23.01'	HP	3.20'	3.10'
PIPE -123	24"	205.00'	HDPE	3.10'	-1.00'
PIPE -124	18"	23.01'	HP	3.70'	3.60'
PIPE -125	18"	200.00'	HDPE	3.60'	0.00'
PIPE -126	36"	79.37'	HDPE	2.65'	2.55'
PIPE -127	36"	154.51'	HDPE	2.55'	2.20'
PIPE -128	36"	17.64'	HP	2.20'	2.10'
PIPE -129	36"	23.04'	HP	2.10'	2.00'
PIPE -130	36"	215.01'	HDPE	2.10'	-1.50'
PIPE -131	36"	110.64'	HDPE	2.20'	2.05'
PIPE -132	36"	154.51'	HDPE	2.05'	1.90'
PIPE -133	36"	23.02'	HP	1.90'	1.80'
PIPE -134	48"	154.52'	HDPE	1.15'	1.00'
PIPE -135	48"	46.33'	HDPE	1.00'	1.00'
PIPE -136	48"	95.00'	HDPE	1.00'	-2.50'
PIPE -137	18"	23.00'	HP	3.80'	3.70'
PIPE -138	24"	106.50'	HDPE	3.30'	3.00'
PIPE -139	18"	23.01'	HP	3.70'	3.60'
PIPE -140	24"	200.00'	HDPE	3.25'	0.00'
PIPE -141	18"	23.01'	HP	3.90'	3.80'
PIPE -142	24"	95.40'	HDPE	3.40'	2.70'
PIPE -143	36"	159.48'	HDPE	2.70'	2.20'
PIPE -144	36"	23.01'	HP	2.20'	2.10'
PIPE -145	36"	35.22'	HP	2.10'	2.00'
PIPE -146	36"	157.92'	HDPE	2.00'	1.70'
PIPE -147	36"	65.00'	HDPE	1.70'	-1.50'
PIPE -148	60"	80.00'	HP	0.72'	0.69'
PIPE -149	60"	80.00'	HP	0.72'	0.69'
PIPE -150	60"	80.00'	HP	0.72'	0.69'
PIPE -151	36"	19.49'	HDPE	2.00'	2.00'
PIPE -152	36"	22.97'	HP	2.00'	2.00'
PIPE -153	36"	129.69'	HDPE	2.00'	2.00'
PIPE -154	36"	140.00'	HDPE	2.00'	2.00'
PIPE -155	36"	95.00'	HDPE	2.00'	0.00'
PIPE -156	18"	23.00'	HP	4.30'	4.20'
PIPE -157	24"	209.43'	HDPE	3.80'	2.40'
PIPE -158	36"	47.31'	HDPE	2.40'	2.30'
PIPE -159	36"	23.00'	HP	2.30'	2.20'
PIPE -160	36"	200.00'	HDPE	2.20'	0.00'
PIPE -161	48"	130.00'	HP	1.95'	1.85'
PIPE -162	36"	50.00'	HDPE	2.00'	2.00'
PIPE -163	30"	30.00'	HDPE	2.45'	2.42'
PIPE -164	30"	35.50'	HP	2.42'	2.39'
PIPE -165	30"	50.00'	HDPE	2.39'	2.33'

STORM PIPE SPECIFICATIONS

HDPE
PIPE SHALL BE HIGH–DENSITY POLYETHYLENE, DUAL WALL, CORRUGATED EXTERIOR, SMOOTH INTERIOR, WATER TIGHT JOINT, INSTALLED PER LATEST NCDOT STD. 300.01 FOR FLEXIBLE PIPE.
(ADS N–12 WT IB, OR APPROVED EQUAL)

HP
PIPE SHALL BE POLYPROPYLENE, DUAL WALL, CORRUGATED EXTERIOR, SMOOTH INTERIOR, WATER TIGHT JOINT, INSTALLED PER LATEST NCDOT STD. 300.01 FOR FLEXIBLE PIPE.
(ADS HP STORM, OR APPROVED EQUAL)

RCP
PIPE SHALL BE RIGID REINFORCED CONCRETE CLASS IV AND INSTALLED PER LATEST NCDOT STD. 300.01 FOR RIGID PIPE.

STORMWATER STRUCTURE TABLE

NAME:	DETAILS:	PIPES IN:	PIPES OUT:
CB-01	RIM = 7.00' SUMP = 1.10'	PIPE -47, 48" INV IN =1.10 PIPE -49, 18" INV IN =2.50	PIPE -46, 48" INV OUT =1.10
CB-02	RIM = 7.00' SUMP = 1.10'	PIPE -67, 48" INV IN =1.10	PIPE -47, 48" INV OUT =1.10
CB-03	RIM = 7.00' SUMP = 3.50'	PIPE -48, 18" INV IN =3.50	PIPE -49, 18" INV OUT =3.50
CB-04	RIM = 7.00' SUMP = 3.60'		PIPE -48, 18" INV OUT =3.60
CB-05	RIM = 7.00' SUMP = 3.50'	PIPE -50, 18" INV IN =3.50	PIPE -51, 18" INV OUT =3.50
CB-06	RIM = 7.00' SUMP = 3.60'		PIPE -50, 18" INV OUT =3.60
CB-07	RIM = 7.00' SUMP = 3.60'		PIPE -68, 18" INV OUT =3.60
CB-08	RIM = 7.00' SUMP = 3.50'	PIPE -68, 18" INV IN =3.50	PIPE -69, 18" INV OUT =3.50
CB-09	RIM = 7.00' SUMP = 1.10'	PIPE -65, 48" INV IN =1.10 PIPE -75, 36" INV IN =1.10	PIPE -66, 48" INV OUT =1.10
CB-10	RIM = 7.00' SUMP = 1.10'	PIPE -64, 48" INV IN =1.10	PIPE -65, 48" INV OUT =1.10
CB-11	RIM = 7.00' SUMP = 2.00'	PIPE -74, 24" INV IN =2.00 PIPE -76, 18" INV IN =3.50	PIPE -75, 36" INV OUT =2.00
CB-12	RIM = 7.00' SUMP = 3.60'		PIPE -76, 18" INV OUT =3.60
CB-13	RIM = 7.00' SUMP = 3.10'	PIPE -73, 18" INV IN =3.50	PIPE -74, 24" INV OUT =3.10
CB-14	RIM = 7.00' SUMP = 3.60'		PIPE -73, 18" INV OUT =3.60
CB-15	RIM = 7.00' SUMP = 2.10'		PIPE -70, 36" INV OUT =2.10 PIPE -72, 36" INV OUT =2.10
CB-16	RIM = 7.00' SUMP = 2.10'	PIPE -70, 36" INV IN =2.10	PIPE -71, 36" INV OUT =2.10
CB-17	RIM = 7.00' SUMP = 1.10'	PIPE -62, 48" INV IN =1.10	PIPE -63, 48" INV OUT =1.10
CB-18	RIM = 7.00' SUMP = 1.10'	PIPE -61, 48" INV IN =1.10 PIPE -79, 36" INV IN =1.10	PIPE -62, 48" INV OUT =1.10
CB-19	RIM = 7.00' SUMP = 3.60'		PIPE -81, 18" INV OUT =3.60
CB-20	RIM = 7.00' SUMP = 2.00'	PIPE -78, 24" INV IN =2.00 PIPE -81, 18" INV IN =3.50	PIPE -79, 36" INV OUT =2.00
CB-21	RIM = 7.00' SUMP = 3.60'		PIPE -77, 18" INV OUT =3.60
CB-22	RIM = 7.00' SUMP = 3.10'	PIPE -77, 18" INV IN =3.50	PIPE -78, 24" INV OUT =3.10
CB-23	RIM = 7.10' SUMP = 3.20'		PIPE -85, 24" INV OUT =3.20 PIPE -87, 24" INV OUT =3.20
CB-24	RIM = 7.10' SUMP = 3.20'	PIPE -87, 24" INV IN =3.20	PIPE -86, 24" INV OUT =3.20
CB-25	RIM = 7.10' SUMP = 1.10'		PIPE -93, 48" INV OUT =1.10 PIPE -95, 48" INV OUT =1.10
CB-26	RIM = 7.10' SUMP = 1.10'	PIPE -95, 48" INV IN =1.10	PIPE -94, 48" INV OUT =1.10
CB-27	RIM = 7.10' SUMP = 3.70'		PIPE -92, 18" INV OUT =3.70
CB-28	RIM = 7.10' SUMP = 2.20'	PIPE -89, 24" INV IN =2.20 PIPE -92, 18" INV IN =3.60	PIPE -90, 36" INV OUT =2.20
CB-29	RIM = 7.10' SUMP = 3.70'		PIPE -88, 18" INV OUT =3.70
CB-30	RIM = 7.10' SUMP = 3.20'	PIPE -88, 18" INV IN =3.60	PIPE -89, 24" INV OUT =3.20
CB-32	RIM = 7.10' SUMP = 1.10'		PIPE -99, 48" INV OUT =1.10 PIPE -101, 48" INV OUT =1.10
CB-33	RIM = 7.10' SUMP = 1.10'	PIPE -101, 48" INV IN =1.10	PIPE -100, 48" INV OUT =1.10
CB-34	RIM = 7.10' SUMP = 3.10'	PIPE -122, 24" INV IN =3.10	PIPE -123, 24" INV OUT =3.10
CB-35	RIM = 7.10' SUMP = 3.20'	PIPE -121, 24" INV IN =3.20	PIPE -122, 24" INV OUT =3.20
CB-36	RIM = 7.10' SUMP = 3.60'	PIPE -124, 18" INV IN =3.60	PIPE -125, 18" INV OUT =3.60
CB-37	RIM = 7.10' SUMP = 3.70'		PIPE -124, 18" INV OUT =3.70
CB-38	RIM = 7.10' SUMP = 3.25'	PIPE -139, 18" INV IN =3.60	PIPE -140, 24" INV OUT =3.25
CB-39	RIM = 7.10' SUMP = 3.70'		PIPE -139, 18" INV OUT =3.70
CB-40	RIM = 7.25' SUMP = 3.40'	PIPE -141, 18" INV IN =3.80	PIPE -142, 24" INV OUT =3.40
CB-41	RIM = 7.25' SUMP = 3.90'		PIPE -141, 18" INV OUT =3.90
CB-42	RIM = 7.40' SUMP = 2.00'	PIPE -152, 36" INV IN =2.00	PIPE -153, 36" INV OUT =2.00
CB-43	RIM = 7.40' SUMP = 2.00'	PIPE -151, 36" INV IN =2.00	PIPE -152, 36" INV OUT =2.00
CB-44	RIM = 7.40' SUMP = 2.20'	PIPE -159, 36" INV IN =2.20	PIPE -160, 36" INV OUT =2.20
CB-45	RIM = 7.40' SUMP = 2.30'	PIPE -158, 36" INV IN =2.30	PIPE -159, 36" INV OUT =2.30
CB-46	RIM = 7.69' SUMP = 3.80'	PIPE -156, 18" INV IN =4.20	PIPE -157, 24" INV OUT =3.80
CB-47	RIM = 7.69' SUMP = 4.30'		PIPE -156, 18" INV OUT =4.30
CB-48	RIM = 7.10' SUMP = 1.10'	PIPE -98, 48" INV IN =1.10	PIPE -97, 48" INV OUT =1.10
CB-49	RIM = 7.10' SUMP = 1.10'		PIPE -96, 48" INV OUT =1.10 PIPE -98, 48" INV OUT =1.10
CB-50	RIM = 7.08' SUMP = 3.20'		PIPE -105, 24" INV OUT =3.20
CB-51	RIM = 7.08' SUMP = 2.10'	PIPE -105, 24" INV IN =3.10	PIPE -106, 36" INV OUT =2.10
CB-52	RIM = 7.30' SUMP = 2.40'	PIPE -110, 36" INV IN =2.40	PIPE -111, 36" INV OUT =2.40

STORMWATER STRUCTURE TABLE

NAME:	DETAILS:	PIPES IN:	PIPES OUT:
CB-53	RIM = 7.10' SUMP = 2.10'	PIPE -111, 36" INV IN =2.10	PIPE -112, 36" INV OUT =2.10
CB-54	RIM = 7.10' SUMP = 2.00'	PIPE -112, 36" INV IN =2.00	PIPE -113, 36" INV OUT =2.00
CB-55	RIM = 7.17' SUMP = 2.20'	PIPE -116, 36" INV IN =2.20	PIPE -117, 36" INV OUT =2.20
CB-56	RIM = 7.10' SUMP = 2.10'	PIPE -117, 36" INV IN =2.10	PIPE -118, 36" INV OUT =2.10
CB-57	RIM = 7.10' SUMP = 2.00'	PIPE -118, 36" INV IN =2.00	PIPE -119, 36" INV OUT =2.00
CB-58	RIM = 7.10' SUMP = 2.10'	PIPE -128, 36" INV IN =2.10	PIPE -129, 36" INV OUT =2.10
CB-59	RIM = 7.10' SUMP = 2.00'	PIPE -129, 36" INV IN =2.00	PIPE -130, 36" INV OUT =2.10
CB-60	RIM = 7.16' SUMP = 2.20'	PIPE -127, 36" INV IN =2.20	PIPE -128, 36" INV OUT =2.20
CB-61	RIM = 7.10' SUMP = 1.90'	PIPE -132, 36" INV IN =1.90	PIPE -133, 36" INV OUT =1.90
CB-62	RIM = 7.10' SUMP = 1.15'	PIPE -133, 36" INV IN =1.80	PIPE -134, 48" INV OUT =1.15
CB-63	RIM = 7.20' SUMP = 3.30'	PIPE -137, 18" INV IN =3.70	PIPE -138, 24" INV OUT =3.30
CB-64	RIM = 7.20' SUMP = 3.80'		PIPE -137, 18" INV OUT =3.80
CB-65	RIM = 7.31' SUMP = 2.00'	PIPE -145, 36" INV IN =2.00	PIPE -146, 36" INV OUT =2.00
CB-66	RIM = 7.20' SUMP = 2.10'	PIPE -144, 36" INV IN =2.10	PIPE -145, 36" INV OUT =2.10
CB-67	RIM = 7.20' SUMP = 2.20'	PIPE -143, 36" INV IN =2.20	PIPE -144, 36" INV OUT =2.20
CB-68	RIM = 7.00' SUMP = 3.60'		PIPE -54, 18" INV OUT =3.60
CB-69	RIM = 7.00' SUMP = 3.50'	PIPE -54, 18" INV IN =3.50	PIPE -55, 18" INV OUT =3.50
CB-70	RIM = 7.00' SUMP = 3.60'		PIPE -57, 18" INV OUT =3.60
CB-71	RIM = 7.00' SUMP = 3.50'	PIPE -57, 18" INV IN =3.50	PIPE -58, 18" INV OUT =3.50
CB-72	RIM = 7.00' SUMP = 3.10'	PIPE -58, 18" INV IN =3.10	PIPE -59, 24" INV OUT =3.10
CB-73	RIM = 7.00' SUMP = 3.00'	PIPE -59, 24" INV IN =3.00	PIPE -60, 24" INV OUT =3.00
CB-74	RIM = 7.00' SUMP = 2.42'	PIPE -163, 30" INV IN =2.42	PIPE -164, 30" INV OUT =2.42
CB-75	RIM = 7.00' SUMP = 2.39'	PIPE -164, 30" INV IN =2.39	PIPE -165, 30" INV OUT =2.39
DI-01	RIM = 6.00' SUMP = 1.10'	PIPE -66, 48" INV IN =1.10 PIPE -69, 18" INV IN =3.00	PIPE -67, 48" INV OUT =1.10
DI-02	RIM = 6.00' SUMP = 1.10'	PIPE -63, 48" INV IN =1.10 PIPE -71, 36" INV IN =2.00	PIPE -64, 48" INV OUT =1.10
DI-03	RIM = 7.60' SUMP = -7.44'	PIPE -120, 24" INV IN =4.00	PIPE -121, 24" INV OUT =4.00
DI-04	RIM = 6.00' SUMP = -6.10'		PIPE -151, 36" INV OUT =2.00 PIPE -162, 36" INV OUT =2.00
DI-05	RIM = 6.50' SUMP = 2.00'	PIPE -153, 36" INV IN =2.00	PIPE -154, 36" INV OUT =2.00
DI-06	RIM = 6.50' SUMP = 2.00'	PIPE -154, 36" INV IN =2.00	PIPE -155, 36" INV OUT =2.00
DI-07	RIM = 6.20' SUMP = 2.40'	PIPE -157, 24" INV IN =2.40	PIPE -158, 36" INV OUT =2.40
DI-08	RIM = 5.90' SUMP = 1.00'	PIPE -102, 48" INV IN =1.00 PIPE -106, 36" INV IN =1.65	PIPE -103, 48" INV OUT =1.00
DI-09	RIM = 6.00' SUMP = 1.10'	PIPE -107, 36" INV IN =2.10 PIPE -108, 24" INV IN =2.10	PIPE -102, 48" INV OUT =1.10
DI-10	RIM = 5.80' SUMP = 0.90'	PIPE -103, 48" INV IN =0.90	PIPE -104, 48" INV OUT =0.90
DI-11	RIM = 6.50' SUMP = 2.65'		PIPE -109, 36" INV OUT =2.65
DI-12	RIM = 6.50' SUMP = 2.55'	PIPE -109, 36" INV IN =2.55	PIPE -110, 36" INV OUT =2.55
DI-13	RIM = 6.50' SUMP = 2.65'		PIPE -115, 36" INV OUT =2.65
DI-14	RIM = 6.50' SUMP = 2.55'	PIPE -115, 36" INV IN =2.55	PIPE -116, 36" INV OUT =2.55
DI-15	RIM = 6.50' SUMP = 2.65'		PIPE -126, 36" INV OUT =2.65
DI-16	RIM = 6.50' SUMP = 2.55'	PIPE -126, 36" INV IN =2.55	PIPE -127, 36" INV OUT =2.55
DI-17	RIM = 6.50' SUMP = 2.05'	PIPE -131, 36" INV IN =2.05	PIPE -132, 36" INV OUT =2.05
DI-18	RIM = 6.50' SUMP = 1.00'	PIPE -134, 48" INV IN =1.00 PIPE -138, 24" INV IN =3.00	PIPE -135, 48" INV OUT =1.00
DI-19	RIM = 6.50' SUMP = 1.00'	PIPE -135, 48" INV IN =1.00	PIPE -136, 48" INV OUT =1.00
DI-20	RIM = 6.50' SUMP = 1.70'	PIPE -146, 36" INV IN =1.70	PIPE -147, 36" INV OUT =1.70
DI-21	RIM = 6.50' SUMP = 2.70'	PIPE -142, 24" INV IN =2.70	PIPE -143, 36" INV OUT =2.70
DI-22	RIM = 6.00' SUMP = 1.80'	PIPE -113, 36" INV IN =1.80	PIPE -114, 36" INV OUT =1.80
DI-23	RIM = 7.00' SUMP = 2.10'	PIPE -90, 36" INV IN =2.10	PIPE -91, 36" INV OUT =2.10
OCS-01	RIM = 7.50' SUMP = 3.00'		PIPE-OCS-01, 36" INV OUT =3.00
OCS-02	RIM = 8.00' SUMP = 3.00'		PIPE-OCS-02, 24" INV OUT =3.00
OCS-03	RIM = 8.00' SUMP = 2.00'	PIPE -162, 36" INV IN =2.00	PIPE-OCS-03, 36" INV OUT =3.75
TEMP-DI-24	RIM = 6.30' SUMP = 2.20'		PIPE -131, 36" INV OUT =2.20

SEE ALT. BOX NOTE BELOW

STORM STRUCTURE SPECIFICATIONS

TYPICAL BOX
BOX CATCH BASIN AND DROP INLET DRAINAGE STRUCTURES SHALL BE TRAFFIC BEARING PRECAST CONCRETE PER LATEST NCDOT STD. 840.46. CATCH BASIN FRAME, GRATE & HOOD SHALL BE LATEST NCDOT 840.03. DROP INLET FRAME & GRADE SHALL BE LATEST NCDOT 840.16
(SEE DETAILS PROVIDED THIS SET)

ALTERNATE BOX
DROP INLETS DI–01 & DI–02 SHALL HAVE AN OPEN THROAT ON THE SIDE OPPOSITE FLORA BLVD. THE THROAT INVERT SHALL BE AT AN ELEVATION OF 5.0' AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH NCDOT STD DETAIL 840.04 "CONCRETE OPEN THROAT CATCH BASIN.

SANITARY SEWER PIPE TABLE

NAME	SIZE	LENGTH	SLOPE	MATERIAL
P-01	8"	420.61'	0.40%	SDR-35
P-02	8"	379.88'	0.40%	SDR-35
P-03	8"	162.08'	0.40%	SDR-35
P-04	8"	331.83'	0.40%	SDR-35
P-05	8"	288.45'	0.40%	SDR-35
P-06	8"	177.80'	0.40%	SDR-35
P-07	8"	72.44'	0.40%	SDR-35
P-09	8"	108.57'	0.40%	DIP
P-10	8"	270.57'	0.40%	SDR-35
P-11	8"	145.90'	0.40%	SDR-35
P-12	8"	243.39'	0.40%	SDR-35
P-13	8"	305.50'	0.40%	SDR-35
P-14	8"	300.07'	0.40%	SDR-35
P-15	8"	142.77'	0.40%	SDR-35
P-16	8"	204.69'	0.40%	SDR-35
P-17	8"	396.00'	0.40%	SDR-35
P-18	8"	396.00'	0.40%	SDR-35
P-19	8"	144.50'	0.40%	DIP
P-20	8"	396.00'	0.40%	SDR-35
P-21	8"	396.00'	0.40%	SDR-35
P-22	8"	137.38'	0.40%	DIP
P-23	8"	396.00'	0.40%	SDR-35
P-24	8"	396.00'	0.40%	SDR-35
P-25	8"	135.52'	0.40%	DIP
P-26	8"	296.00'	0.40%	SDR-35
P-27	8"	393.48'	0.40%	SDR-35
P-28	8"	218.45'	0.40%	SDR-35
P-29	8"	338.32'	0.40%	SDR-35
P-30	8"	413.48'	0.40%	SDR-35
P-31	8"	215.87'	0.40%	SDR-35
P-32	8"	223.44'	0.40%	SDR-35
P-33	8"	386.17'	0.40%	SDR-35
P-34	8"	51.20'	0.40%	SDR-35
P-35	8"	318.99'	0.40%	SDR-35
P-36	8"	297.54'	0.40%	SDR-35
P-37	8"	295.75'	0.40%	SDR-35
P-38	8"	157.45'	0.40%	SDR-35
P-39	8"	217.50'	0.40%	SDR-35
P-40	8"	114.98'	0.40%	SDR-35
P-41	8"	49.19'	0.41%	SDR-35
STB-1	8"	0.76'	0.00%	DIP
STB-2	8"	0.58'	0.00%	SDR-35
STB-3	8"	0.67'	0.00%	SDR-35
STB-4	8"	0.63'	0.00%	SDR-35

SANITARY SEWER STRUCTURE TABLE

NAME:	DETAILS:	DETAILS:	PIPES IN:	PIPES OUT:
MH-3	DIA = 48" HEIGHT = 10.33'	RIM = 7.50' SUMP = -2.83'	P-01, 8" SDR-35 INV. IN = -2.73 P-19, 8" DIP INV. IN = -0.84	P-02, 8" SDR-35 INV. OUT = -2.83
MH-4 [DROP P–22]	DIA = 60" HEIGHT = 11.97'	RIM = 7.50' SUMP = -4.47'	P-02, 8" SDR-35 INV. IN = -4.37 P-22, 8" DIP INV. IN = -0.81	P-03, 8" SDR-35 INV. OUT = -4.47
MH-5 [DROP P–25]	DIA = 60" HEIGHT = 13.14'	RIM = 7.90' SUMP = -5.24'	P-03, 8" SDR-35 INV. IN = -5.14 P-25, 8" DIP INV. IN = -0.86	P-04, 8" SDR-35 INV. OUT = -5.24
MH-6 [DROP P–28]	DIA = 60" HEIGHT = 15.49'	RIM = 8.70' SUMP = -6.79'	P-04, 8" SDR-35 INV. IN = -6.59 P-28, 8" SDR-35 INV. IN = -3.10 P-30, 8" SDR-35 INV. IN = -6.14	P-05, 8" SDR-35 INV. OUT = -6.79
MH-9	DIA = 48" HEIGHT = 8.25'	RIM = 8.00' SUMP = -0.25'	P-18, 8" SDR-35 INV. IN = -0.15	P-19, 8" DIP INV. OUT = -0.25
MH-10	DIA = 48" HEIGHT = 6.55'	RIM = 8.00' SUMP = 1.45'	P-17, 8" SDR-35 INV. IN = 1.55	P-18, 8" SDR-35 INV. OUT = 1.45
[VENT] MH-11	DIA = 48" HEIGHT = 4.85'	RIM = 8.00' SUMP = 3.15'		P-17, 8" SDR-35 INV. OUT = 3.15
MH-12	DIA = 48" HEIGHT = 8.24'	RIM = 8.00' SUMP = -0.24'	P-21, 8" SDR-35 INV. IN = -0.14	P-22, 8" DIP INV. OUT = -0.24
MH-13	DIA = 48" HEIGHT = 6.54'	RIM = 8.00' SUMP = 1.46'	P-20, 8" SDR-35 INV. IN = 1.56	P-21, 8" SDR-35 INV. OUT = 1.46
[VENT] MH-14	DIA = 48" HEIGHT = 4.84'	RIM = 8.00' SUMP = 3.16'		P-20, 8" SDR-35 INV. OUT = 3.16
MH-15	DIA = 48" HEIGHT = 7.65'	RIM = 7.35' SUMP = -0.30'	P-24, 8" SDR-35 INV. IN = -0.20	P-25, 8" DIP INV. OUT = -0.30
MH-16	DIA = 48" HEIGHT = 6.20'	RIM = 7.60' SUMP = 1.40'	P-23, 8" SDR-35 INV. IN = 1.50	P-24, 8" SDR-35 INV. OUT = 1.40
[VENT] MH-17	DIA = 48" HEIGHT = 4.65'	RIM = 7.75' SUMP = 3.10'		P-23, 8" SDR-35 INV. OUT = 3.10
MH-18 [DROP P–27]	DIA = 60" HEIGHT = 9.85'	RIM = 7.65' SUMP = -2.20'	P-27, 8" SDR-35 INV. IN = 0.40	P-28, 8" SDR-35 INV. OUT = -2.20
MH-20	DIA = 48" HEIGHT = 5.90'	RIM = 7.90' SUMP = 2.00'	P-26, 8" SDR-35 INV. IN = 2.10	P-27, 8" SDR-35 INV. OUT = 2.00
[VENT] MH-21	DIA = 48" HEIGHT = 4.75'	RIM = 8.05' SUMP = 3.30'		P-26, 8" SDR-35 INV. OUT = 3.30
MH-23	DIA = 48" HEIGHT = 15.91'	RIM = 7.85' SUMP = -8.06'	P-05, 8" SDR-35 INV. IN = -7.96	P-06, 8" SDR-35 INV. OUT = -8.06
MH-25	DIA = 48" HEIGHT = 16.94'	RIM = 8.05' SUMP = -8.89'	P-06, 8" SDR-35 INV. IN = -8.79 P-16, 8" SDR-35 INV. IN = -8.79	P-07, 8" SDR-35 INV. OUT = -8.89
MH-27	DIA = 48" HEIGHT = 15.51'	RIM = 7.55' SUMP = -7.96'	P-15, 8" SDR-35 INV. IN = -7.86	P-16, 8" SDR-35 INV. OUT = -7.96
MH-29	DIA = 48" HEIGHT = 14.87'	RIM = 7.60' SUMP = -7.27'	P-14, 8" SDR-35 INV. IN = -7.17	P-15, 8" SDR-35 INV. OUT = -7.27
MH-30	DIA = 48" HEIGHT = 13.95'	RIM = 8.00' SUMP = -5.95'	P-13, 8" SDR-35 INV. IN = -5.85	P-14, 8" SDR-35 INV. OUT = -5.95
MH-35	DIA = 48" HEIGHT = 12.52'	RIM = 8.05' SUMP = -4.47'	P-29, 8" SDR-35 INV. IN = -4.37 P-34, 8" SDR-35 INV. IN = -3.48	P-30, 8" SDR-35 INV. OUT = -4.47
[VENT] MH-37	DIA = 48" HEIGHT = 11.10'	RIM = 8.10' SUMP = -3.00'	STB-2, 8" SDR-35 INV. IN = -0.94 STB-3, 8" SDR-35 INV. IN = -2.90	P-29, 8" SDR-35 INV. OUT = -3.00
MH-38	DIA = 48" HEIGHT = 11.11'	RIM = 7.85' SUMP = -3.26'	P-33, 8" SDR-35 INV. IN = -3.16	P-34, 8" SDR-35 INV. OUT = -3.26
MH-40	DIA = 48" HEIGHT = 9.40'	RIM = 7.80' SUMP = -1.60'	P-32, 8" SDR-35 INV. IN = -1.50	P-33, 8" SDR-35 INV. OUT = -1.60
MH-41	DIA = 48" HEIGHT = 8.29'	RIM = 7.70' SUMP = -0.59'	P-31, 8" SDR-35 INV. IN = 1.62	P-32, 8" SDR-35 INV. OUT = -0.59
[VENT] MH-42	DIA = 48" HEIGHT = 5.15'	RIM = 7.65' SUMP = 2.50'		P-31, 8" SDR-35 INV. OUT = 2.50
[VENT] MH-44	DIA = 48" HEIGHT = 5.25'	RIM = 7.75' SUMP = 2.50'		P-37, 8" SDR-35 INV. OUT = 2.50
MH-45	[VENT]DIA = 48" HEIGHT = 8.61'	RIM = 7.45' SUMP = -1.16'	P-37, 8" SDR-35 INV. IN = 1.30	P-38, 8" SDR-35 INV. OUT = -1.16
MH-47	DIA = 48" HEIGHT = 9.86'	RIM = 7.95' SUMP = -1.91'	P-38, 8" SDR-35 INV. IN = -1.81 STB-4, 8" SDR-35 INV. IN = -1.81	P-35, 8" SDR-35 INV. OUT = -1.91
MH-48	DIA = 48" HEIGHT = 11.20'	RIM = 7.90' SUMP = -3.30'	P-35, 8" SDR-35 INV. IN = -3.20	P-36, 8" SDR-35 INV. OUT = -3.30
MH-49 [DROP P–41]	DIA = 60" HEIGHT = 9.20'	RIM = 8.00' SUMP = -1.20'	P-10, 8" SDR-35 INV. IN = -1.10 P-41, 8" SDR-35 INV. IN = 1.51	P-11, 8" SDR-35 INV. OUT = -1.20
MH-52	DIA = 48" HEIGHT = 7.70'	RIM = 7.70' SUMP = 0.00'	P-09, 8" DIP INV. IN = 0.10	P-10, 8" SDR-35 INV. OUT = 0.00
[VENT] MH-53	DIA = 48" HEIGHT = 7.45'	RIM = 8.00' SUMP = 0.55'		P-09, 8" DIP INV. OUT = 0.55
MH-54	DIA = 48" HEIGHT = 6.67'	RIM = 8.40' SUMP = 1.73'	P-40, 8" SDR-35 INV. IN = 1.83	P-41, 8" SDR-35 INV. OUT = 1.73
MH-55	DIA = 48" HEIGHT = 6.29'	RIM = 8.60' SUMP = 2.31'	P-39, 8" SDR-35 INV. IN = 2.41	P-40, 8" SDR-35 INV. OUT = 2.31
[VENT] MH-57	DIA = 48" HEIGHT = 5.05'	RIM = 8.35' SUMP = 3.30'	FUTURE 4" FM STB INV. IN = 4.00	P-39, 8" SDR-35 INV. OUT = 3.30
MH-59	DIA = 48" HEIGHT = 10.25'	RIM = 8.05' SUMP = -2.20'	P-11, 8" SDR-35 INV. IN = -1.80	P-12, 8" SDR-35 INV. OUT = -2.20
MH-60	DIA = 48" HEIGHT = 12.61'	RIM = 8.00' SUMP = -4.61'	P-12, 8" SDR-35 INV. IN = -3.19 P-36, 8" SDR-35 INV. IN = -4.51	P-13, 8" SDR-35 INV. OUT = -4.61
[VENT] MH-62	DIA = 48" HEIGHT = 8.58'	RIM = 7.55' SUMP = -1.03'	STB-1, 8" DIP INV. IN = -0.93	P-01, 8" SDR-35 INV. OUT = -1.03

[DROP] = DROP PIPE OUTSIDE MANHOLE AS NOTED – SEE TYP. DETAIL
[VENT] = VENTED MANHOLE – SEE TYP DETAIL
STB = STUB OUT FOR FUTURE GRAVITY SEWER CONNECTION
FM = STUB OUT FOR FUTURE SEWER FORCEMAIN CONNECTION – SEE TYP. DETAIL

Bissell Professional Group
Firm License # C–956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261–3266
FAX (252) 261–1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

STORMWATER & WASTEWATER
PIPE & STRUCTURE TABLES

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

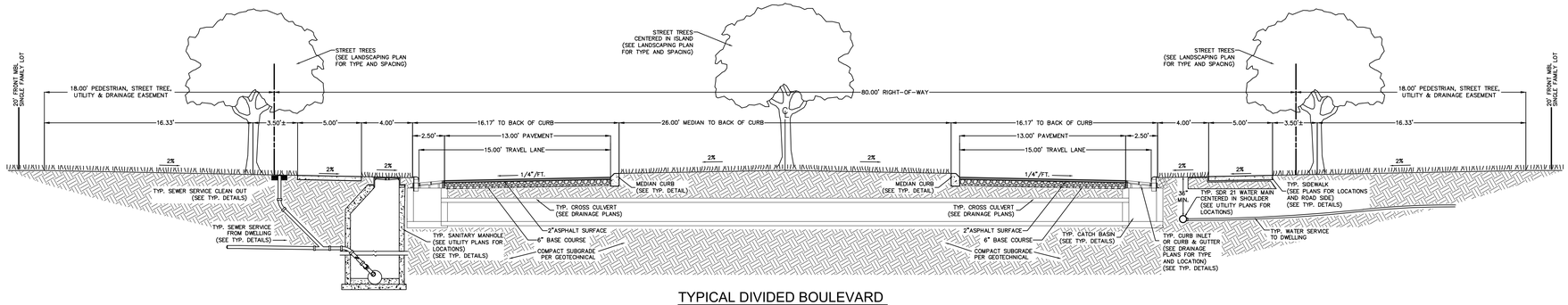
REVISIONS

NO.	DATE	DESCRIPTION	BY
1	9–20–24	OCS–02 PIPE	DMK

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

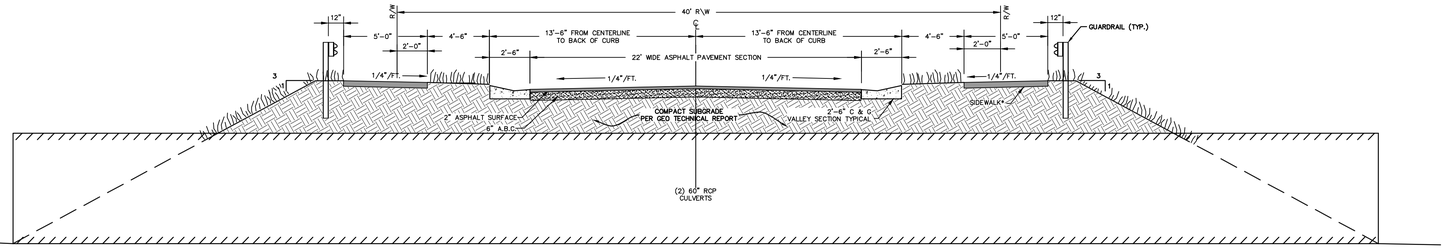
DATE: 4/10/24
SCALE: AS NOTED
DESIGNED: BPG
CHECKED: MSB
DRAWN: DMK
APPROVED: MSB
SHEET: 40 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

S:\projects\4680 Flora Tract (East 1)\dwg\Construction Drawings\4680001.dwg 9/26/2024 Plotted: 9/26/2024 10:56 AM DWF6 ePlot.pc3



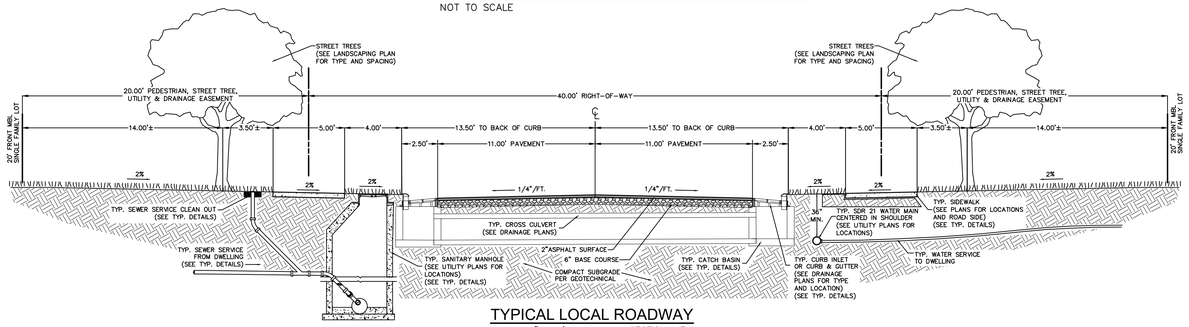
TYPICAL DIVIDED BOULEVARD

SCALE: 1" = 5' SECTION VIEW



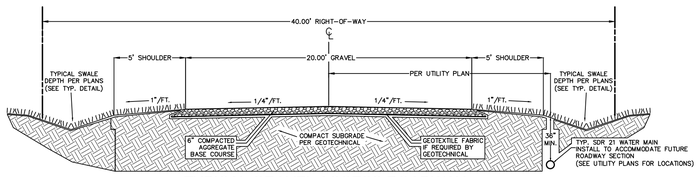
TYPICAL ROADWAY CROSSING SECTION VIEW

NOT TO SCALE



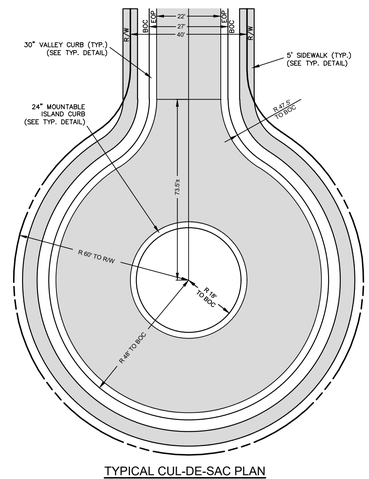
TYPICAL LOCAL ROADWAY

SCALE: 1" = 5' SECTION VIEW



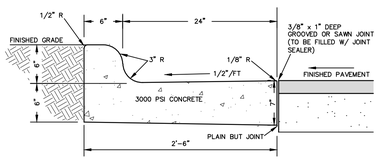
TYPICAL GRAVEL ACCESS ROADWAY

SCALE: 1" = 5' SECTION VIEW



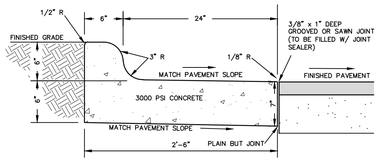
TYPICAL CUL-DE-SAC PLAN

NOT TO SCALE PLAN VIEW



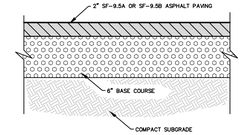
CURB & GUTTER COLLECTION SECTION

NOT TO SCALE NCDOT STD 846.01



CURB & GUTTER DUMP SECTION

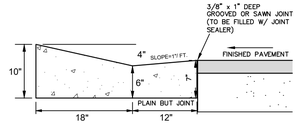
NOT TO SCALE NCDOT STD 846.01



TYPICAL RESIDENTIAL ROADWAY PAVEMENT SECTION

NOT TO SCALE

NOTE:
PAVING SHALL CONSIST OF FINE GRADING THE SPECIFIED PARKING & DRIVE AREAS AND INSTALLING 2" SF-9.5A OR SF-9.5B ASPHALT CONCRETE SURFACE COURSE IN CONJUNCTION WITH A 6" AGGREGATE BASE COURSE. THE SOIL SUBGRADE BENEATH PAVEMENTS SHALL BE COMPACTED TO AT LEAST 95% OF ASTM D 698 PRIOR TO ANY PLACEMENT OF SUBBASE FILL OR STONE BASE COURSE. ALL SITE PREPARATION AND THE DESIGN AND CONSTRUCTION OF ALL FOUNDATIONS, GROUND SLABS, AND PAVEMENTS SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS PROVIDED BY A GEOTECHNICAL ENGINEER.

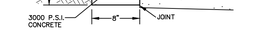


CURB & GUTTER VALLEY SECTION

NOT TO SCALE

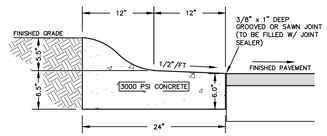
GENERAL CURB & GUTTER NOTES:

1. PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
2. JOINT SPACING MAY BE ALTERED IF REQUIRED BY ENGINEER.
3. CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1-1/2" DEEP.
4. FILL ALL CONSTRUCTION JOINTS, EXCEPT IN 8"X6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.
5. SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.



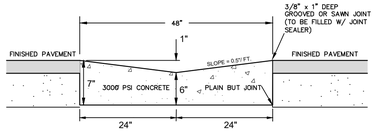
MEDIAN CURB SECTION

NOT TO SCALE NCDOT 846.01



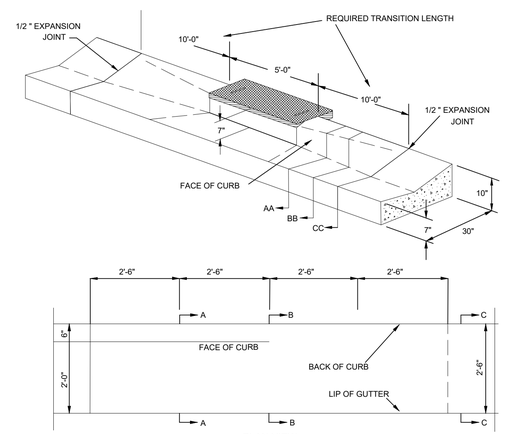
MOUNTABLE ISLAND CURB

NOT TO SCALE



VALLEY GUTTER SECTION

NOT TO SCALE



CURB & GUTTER TRANSITION SECTION

Bissell Professional Group
Bissell Building
312 North Gloston Highway
Kitty Hawk, North Carolina 27949
PHONE (252) 261-3300
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

ROADWAY & CURBING CONSTRUCTION DETAILS

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK NORTH CAROLINA
CURRITUCK COUNTY
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION
8		

PRELIMINARY DO NOT USE FOR CONSTRUCTION

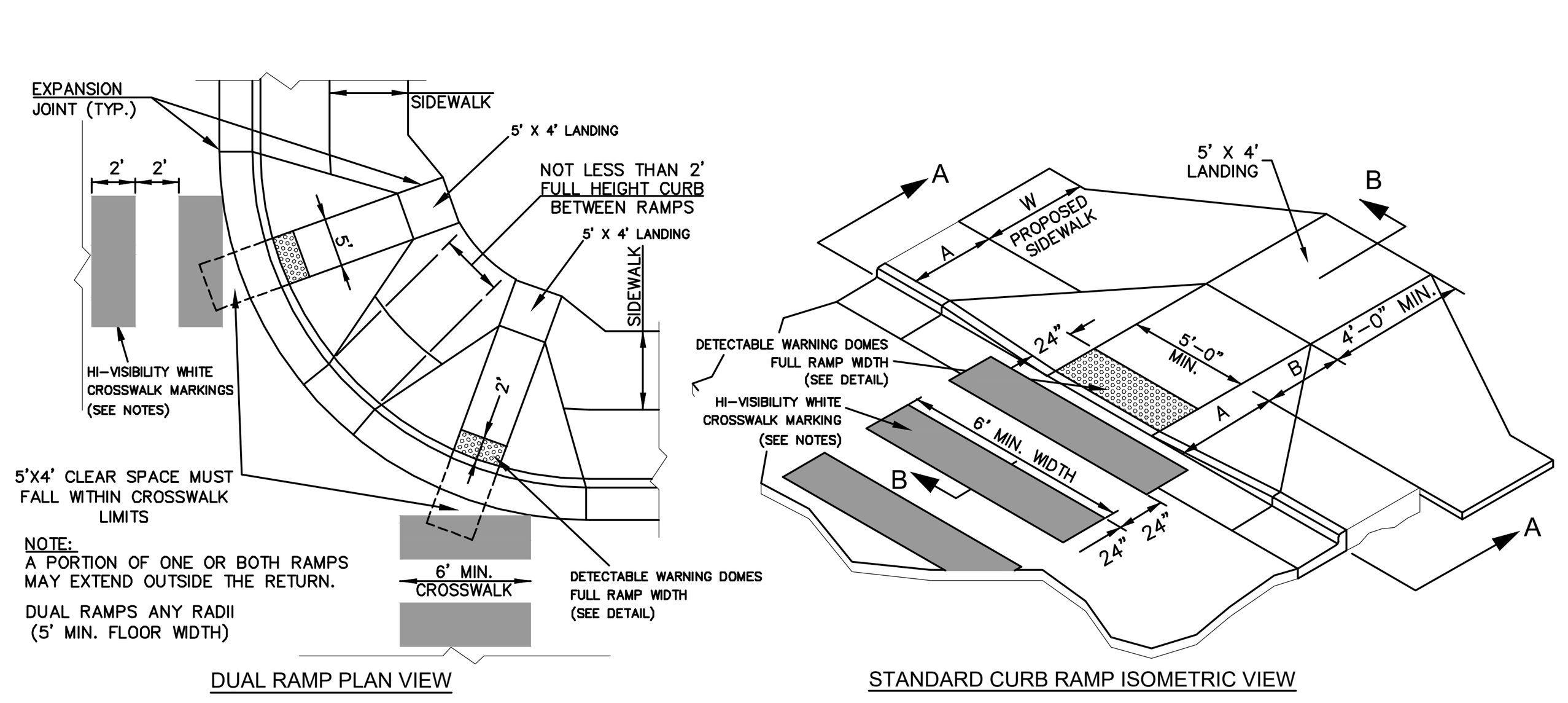
DATE:	SCALE:
4/10/24	AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 41 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

S:\projects\4680 Flora Trust (Post II)\dwg\Construction Drawings\4680000B1.dwg 9/26/2024 Plotted: 9/26/2024 10:56 AM DWG ePlot.pc3



DUAL RAMP PLAN VIEW

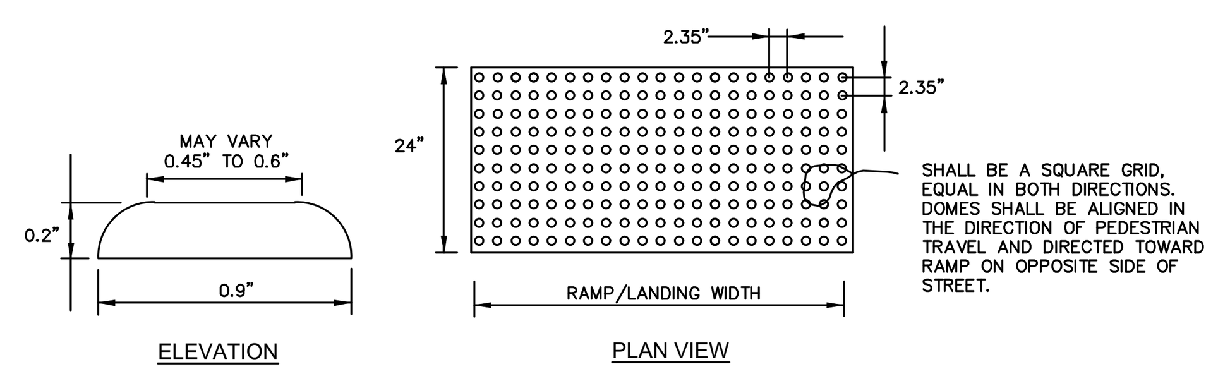
STANDARD CURB RAMP ISOMETRIC VIEW

ACCESSIBLE RAMP GENERAL NOTES: [NCDOT STD. DETAIL 848.05]

1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN ON THE PROJECT DRAWINGS OR AS DIRECTED BY THE ENGINEER. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT AND LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A MIN. 4'X4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SETBACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
5. REFER TO PROJECT DRAWINGS FOR STOP BAR LOCATIONS, IF PROVIDED, OR AS DIRECTED BY THE ENGINEER..
6. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE, OR AS SPECIFIED ON PLANS.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% (12:1 H:V) MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. WHERE REQUIRED, CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MIN. OF 4'X4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'X5' WITH A MAXIMUM SLOPE OF 2% IN AN DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGHOUT THE ISLAND
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'X5' LANDING AT THE TOP OF A RAMP, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS.

PEDESTRIAN CROSSWALK GENERAL NOTES: [NCDOT STD. DETAIL 1205.07]

1. USE THE DETAILS ABOVE AND THE FOLLOWING NOTES FOR GUDIANCE IN PLACING CROSSWALK MARKINGS. REFER TO NCDOT ROADWAY STANDARD DRAWINGS, MUTCD AND ADA STANDARDS FOR ADDITIONAL GUIDANCE.
2. THE LOCATION AND TYPE OF CROSSWALK MARKINGS SHOWN ON THE ABOVE DETAILS ARE FOR REFERENCE ONLY. LOCATE CROSSWALK MARKINGS AS SHOWN ON THE PROJECT DRAWINGS OR AS DIRECTED BY THE ENGINEER. THE CROSSWALK MARKING TYPE, STANDARD OR HI-VISIBILITY, SHALL BE INSTALLED AS SPECIFIED ON THE PROJECT DRAWINGS OR AS DIRECTED BY THE ENGINEER..
3. THE STANDARD CROSSWALK IS THE TWO WHITE 8" MIN. TRANSVERSE LINES WITH A 6' MIN. GAP BETWEEN THE LINES. THE HI-VISIBILITY CROSSWALK IS WHITE 24" MAX. WIDE LONGITUDINAL LINES WITH 24" MIN. GAPS BETWEEN LINES, SEE DETAIL, HI-VISIBILITY CROSSWALKS SHOULD BE A MINIMUM OF 6' WIDE OR AS SPECIFIED ON THE PROJECT DRAWINGS. CURB RAMPS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING AN FLARES.
4. STOP BARS (IF PROVIDED) SHOULD BE PLACED A 4' MIN. IN ADVANCE OF NEAREST CROSSWALK LINE.
5. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.
6. BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4'X4' MIN. SHALL BE PROVIDED WITHIN THE MARKINGS.
7. SINGLE DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 2' MIN. LONG LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING, SEE DETAIL.
8. CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWINGS. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS.



ELEVATION

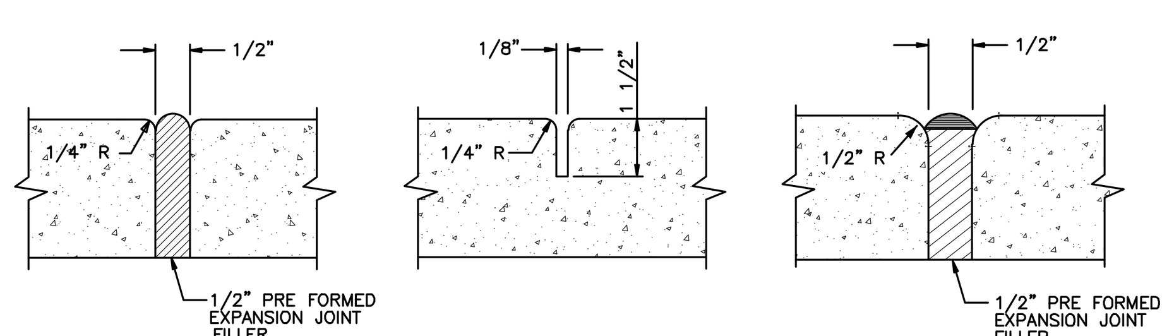
PLAN VIEW

TRUNCATED DOME DETECTABLE WARNING DETAIL

NOT TO SCALE

DETECTABLE WARNING GENERAL NOTES

1. DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES MANUFACTURED BY "COTE-L INDUSTRIES, INC.", CALLED "SAFTI-TRAX", WITH POLYURETHANE COATING "DURABAK", OR APPROVED EQUAL. APPLIED ON SMOOTH (NON-GROOVED) CLEAN CONCRETE RAMP, AS DIRECTED BY THE ENGINEER, AND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
2. ALL DETECTABLE WARNING AREAS SHALL START AT BACK OF CURB, BE 24 INCHES IN DEPTH AND COVER THE COMPLETE WIDTH OF THE RAMP AREA 48 INCHES MIN..
3. 70% VISUAL CONTRAST IS REQUIRED. THE COLOR SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING MATERIAL, AS SPECIFIED ON THE PLANS. COLOR TO BE DETERMINED BY THE CITY STAFF, SAFETY YELLOW IS THE DEFAULT COLOR.
4. THE SMOOTH AND CLEAN CONCRETE UNDER DETECTABLE WARNING DEVICE AREA SHALL BE INCLUDED IN THE COST OF THE CONCRETE CURB RAMP. THE COST OF FURNISHING AND INSTALLING THE DETECTABLE WARNING DEVICE SHALL BE INCLUDED SEPARATELY AS "DETECTABLE WARNING DEVICE" PER SQUARE FOOT OR AS OUTLINED IN THE SPECIFICATIONS.
5. DETECTABLE WARNING SURFACE:
APPLIED A COATING OF "DURABAK" SLIP-RESISTANT POLYURETHANE COATING TO THE SMOOTH, CLEAN CONCRETE SURFACE. ON TOP OF THE POLYURETHANE COATING APPLY TRUNCATED DOMES FROM A "SAFTY-TRAX" CONTACT SHEET. ON TOP OF THE TRUNCATED DOMES AND IN POLYURETHANE COATING PLACE THREE ADDITIONAL COATS OF "DURABAK" POLYURETHANE COATING. COLOR TO BE DETERMINED BY CITY STAFF OR AS SPECIFIED ON THE PLANS. SAFETY YELLOW IS A DEFAULT COLOR.
6. ALL RAMPS AND DETECTABLE WARNING SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL AND DIRECTED TOWARD RAMP ON THE OPPOSITE SIDE OF STREET.



TYPE "A" JOINT

TYPE "B" JOINT

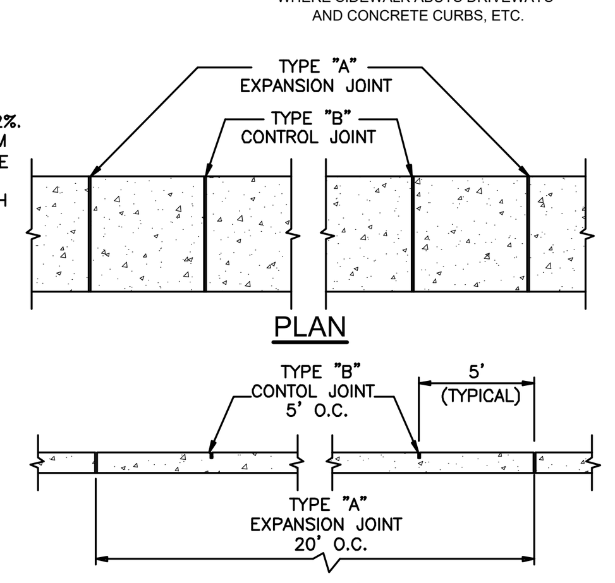
TYPE "C" JOINT

WHERE SIDEWALK ABUTS DRIVEWAYS AND CONCRETE CURBS, ETC.

SIDEWALK AND WALKING TRAIL NOTES:

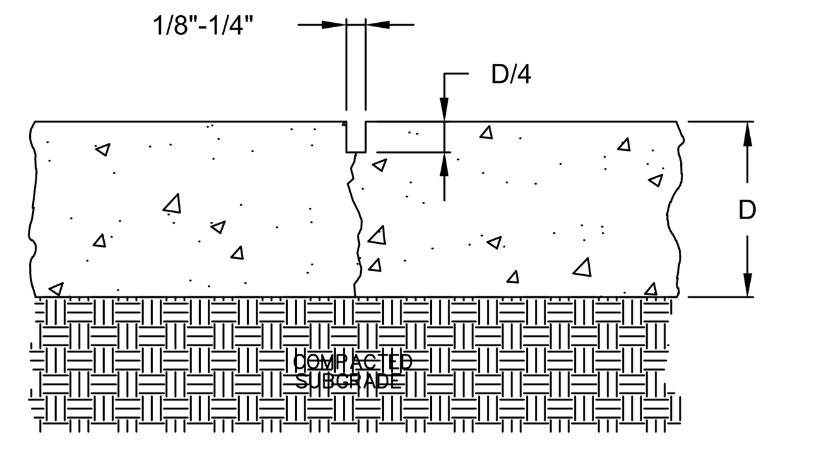
1. WALKS SHALL HAVE A 4 INCH MINIMUM THICKNESS.
2. CONCRETE SHALL BE A MINIMUM OF 3,000 PSI.
3. WALKS SHALL HAVE A 5 FOOT MINIMUM WIDTH.
4. CROSS SLOPE SHALL BE LIMITED TO A MAXIMUM OF 2%.
5. LONGITUDINAL SLOPE SHALL BE LIMITED TO A MAXIMUM OF 1:20 (V:H) EXCEPT WHERE ACCESIBILTY RAMPS ARE PROVIDED AS NOTED.
6. ALL SIDEWALKS AND TRAILS SHALL BE COMPLIANT WITH THE LATEST HANDICAP ACCESSIBILITY REQUIREMENTS.

TABLE OF SIDEWALK JOINTS	
TYPE	LOCATION
"A"	20' CENTER TO CENTER ON SIDEWALKS, P.C. AND P.T. OF CURVES. JUNCTION OF EXISTING AND NEW SIDEWALKS, DRIVEWAYS, AND SIMILAR STRUCTURES.
"B"	5' CENTER TO CENTER ON SIDEWALKS.



PLAN

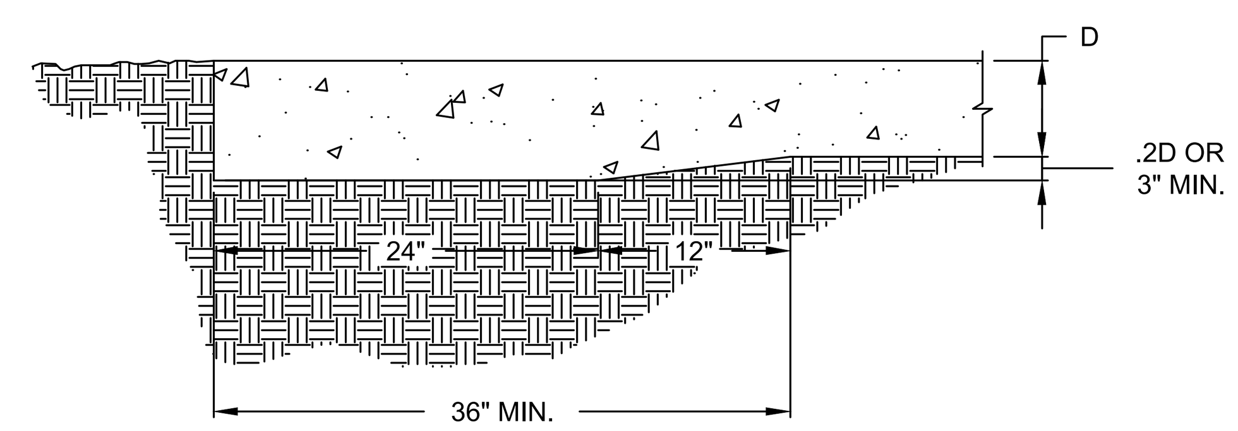
ELEVATION



CONVENTIONAL CONCRETE CONTROL JOINT DETAIL

NOT TO SCALE SECTION VIEW

NOTES:
MINIMUM PAVEMENT THICKNESS (D) = 6" W/6x6-W2.9 x W2.9 WWF REINFORCEMENT, PLACE 2" BELOW TOP OF SLAB
UNDOWELED TRANSVERSE CONTRACTION OR LONGITUDINAL JOINT, SAWED OR PRE-MOLDED. DO NOT DOWEL PAVEMENTS LESS THAN 7" THICK.

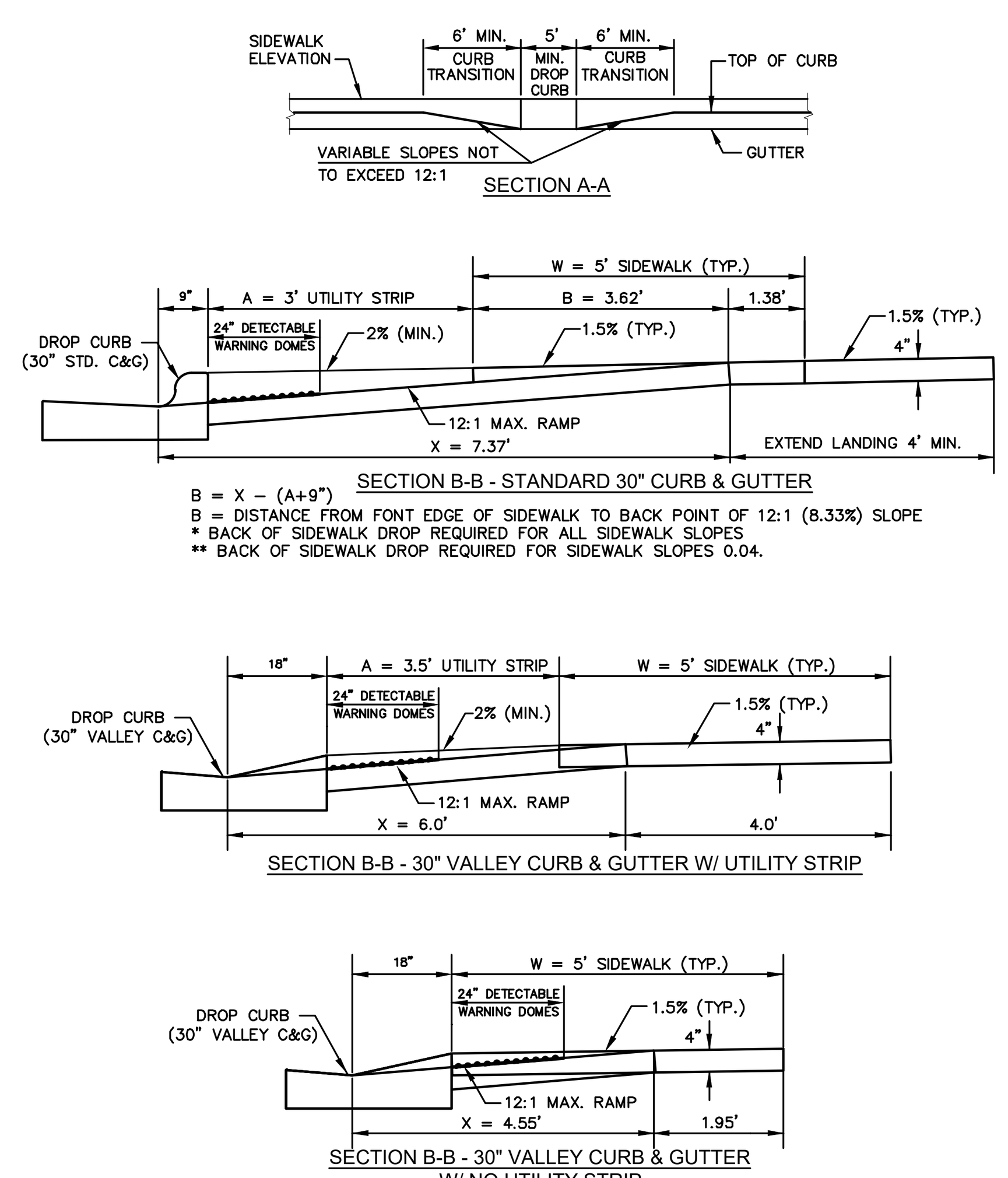


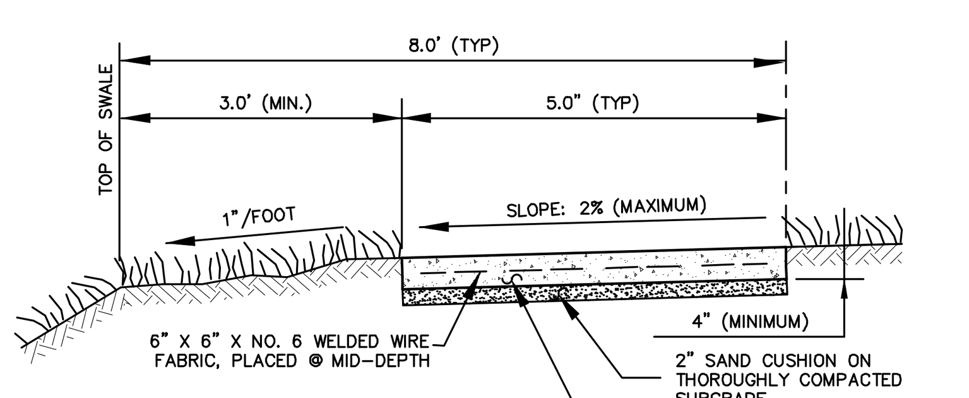
CONVENTIONAL CONCRETE THICKENED EDGE DETAIL

NOT TO SCALE SECTION VIEW

CONVENTIONAL CONCRETE SPECIFICATIONS:

1. USE ACI CERTIFIED FLATWORK FINISHER
2. USE ACI 330R-01 GUIDE FOR DESIGN AND CONSTRUCTION OF CONCRETE PARKING LOTS
3. USE ACI 330.1-94 STANDARD SPECIFICATION FOR PLAIN CONCRETE PARKING LOTS
4. ALL CONCRETE USED IN PARKING LOT, UNLESS OTHERWISE INDICATED, SHALL HAVE A COMPRESSIVE STRENGTH OF 3,500 PSI AT 28 DAYS.
5. IF SUBGRADE SOILS ARE FOUND BY THE CONTRACTOR TO BE UNSUITABLE, TESTING AND PREPARATION RECOMMENDATIONS BY A GEOTECHNICAL ENGINEER MUST BE PROVIDED PRIOR TO CONCRETE PLACEMENT.
6. IMPORTED SOIL USE FOR BACK FILL SHOULD BE FREE OF HEAVY CLAY, SILTS, STONES, PLANT ROOT OR OTHER FOREIGN MATERIAL GREATER THAN 1½" IN DIAMETER IN ORDER TO ACHIEVE ADEQUATE COMPACTION AROUND ANY FIXED OBJECT IN GROUND. ALTERNATE WILL BE TO USE FLOWABLE FILL.
7. KEEP ALL JOINTS CONTINUOUS WITH A MAXIMUM JOINT SPACING OF 10 FT.
8. CONTROL JOINTS SHALL BE FORMED OR SAWED WITHIN 12 HOURS FROM TIME OF PLACEMENT;
   A. SIDEWALK-SPACING SHALL BE SAME AS WIDTH OF PAVEMENT AND LESS THAN 5 FEET IN LENGTH
   B. PAVEMENT-MAXIMUM SPACING SHALL BE 2.5 TIMES THICKNESS IN UNIT OF FEET AND LESS THAN 15 FEET IN LENGTH (E.G. T=4 INCH SPACING AT 10'x10')
9. CURE CONCRETE IMMEDIATELY AFTER FINISHING OPERATION IS COMPLETED BY USING ONE OF THE FOLLOWING METHODS: WATER, PIGMENTED WATER-BASED CURING COMPOUND OR VISQUEEN AND BURLAP

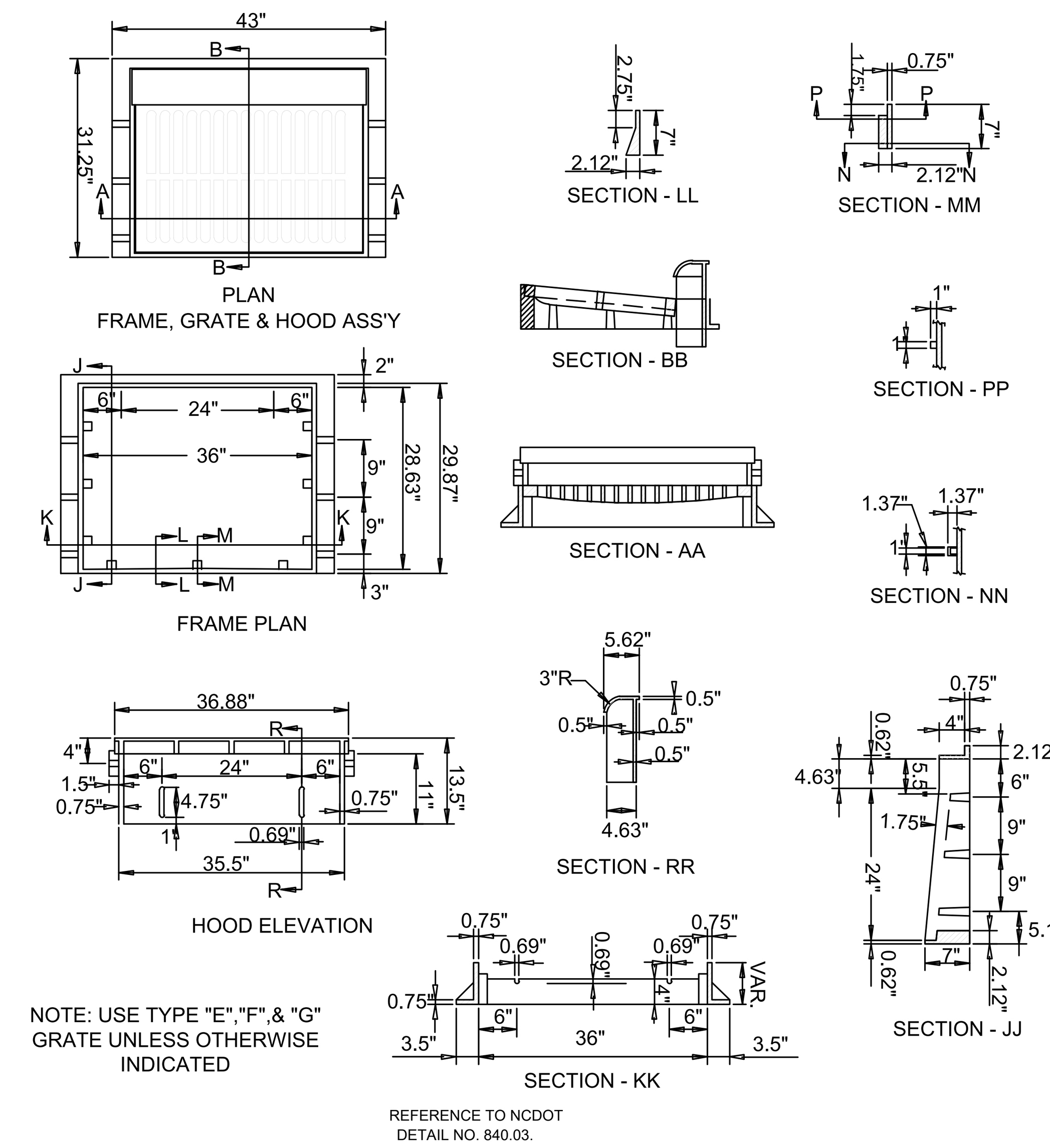




SECTION

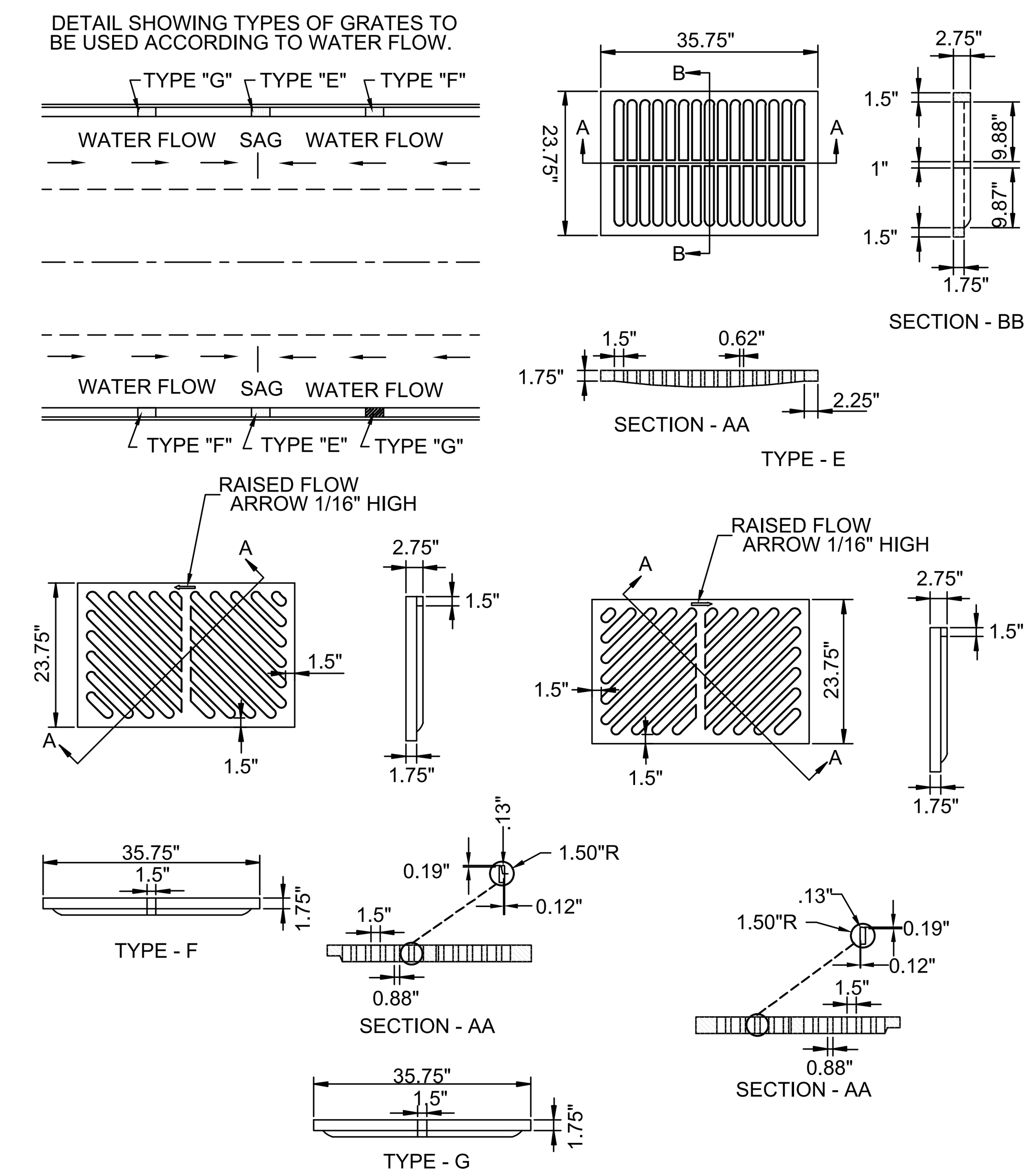
TYP. CONCRETE SIDEWALK DETAIL

NOT TO SCALE



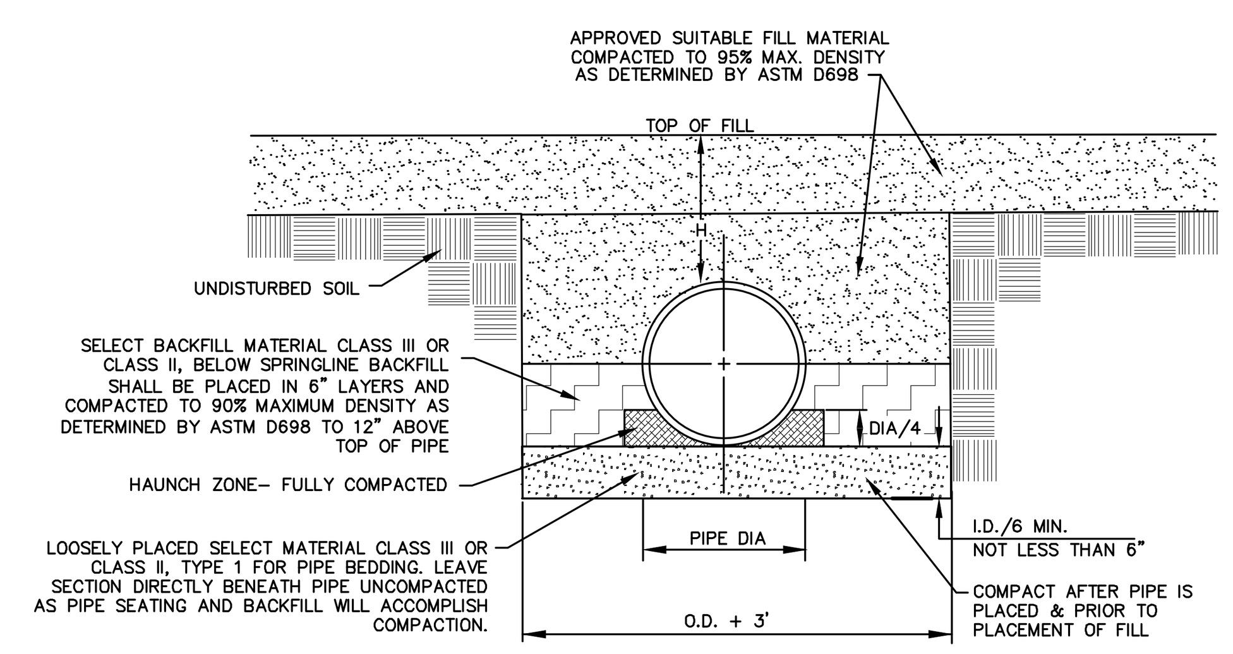
CATCH BASIN FRAME,GRATE & HOOD DETAIL

NOT TO SCALE NCDOT STD 840.03



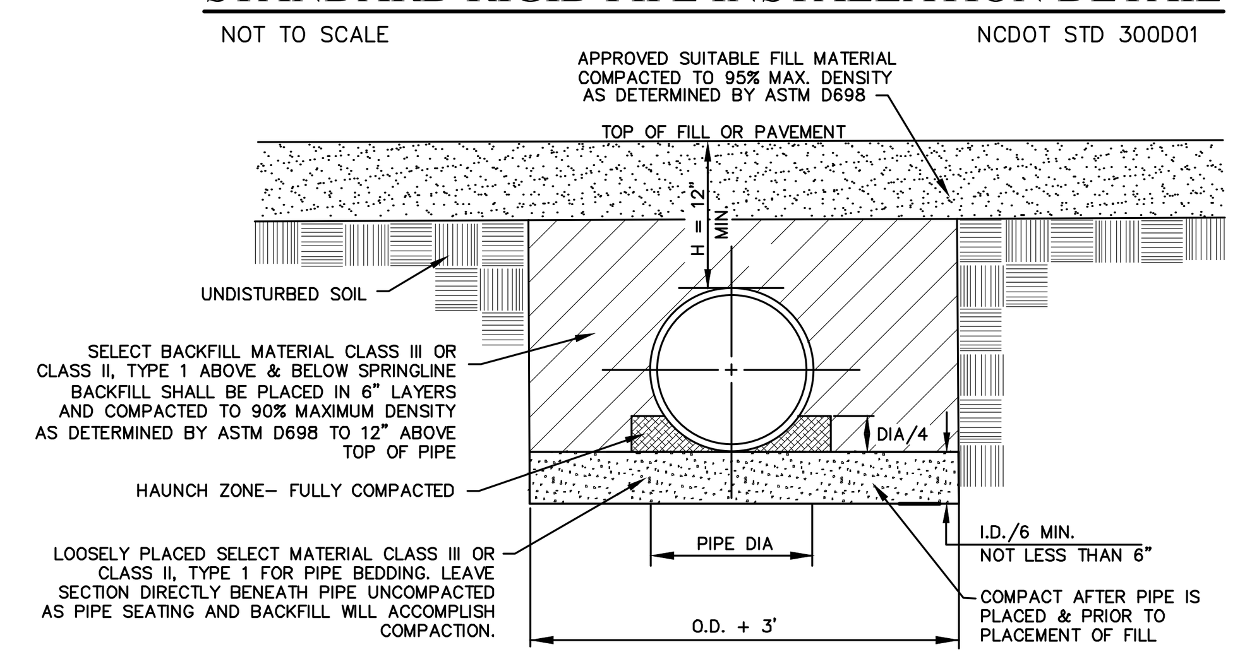
CATCH BASIN GRATE DETAIL

NOT TO SCALE NCDOT STD 840.03B



STANDARD RIGID PIPE INSTALLATION DETAIL

NOT TO SCALE NCDOT STD 300D01



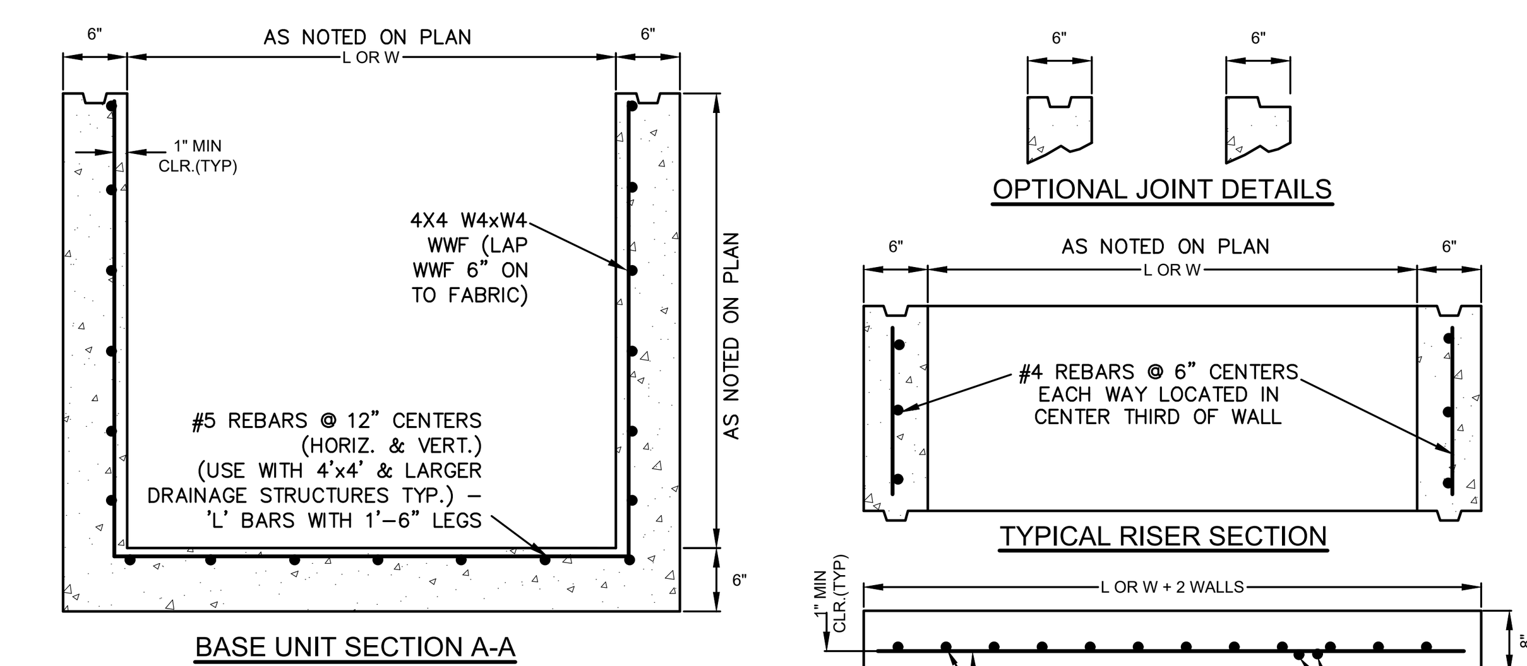
STANDARD FLEXIBLE PIPE INSTALLATION DETAIL

NOT TO SCALE NCDOT STD 300D01

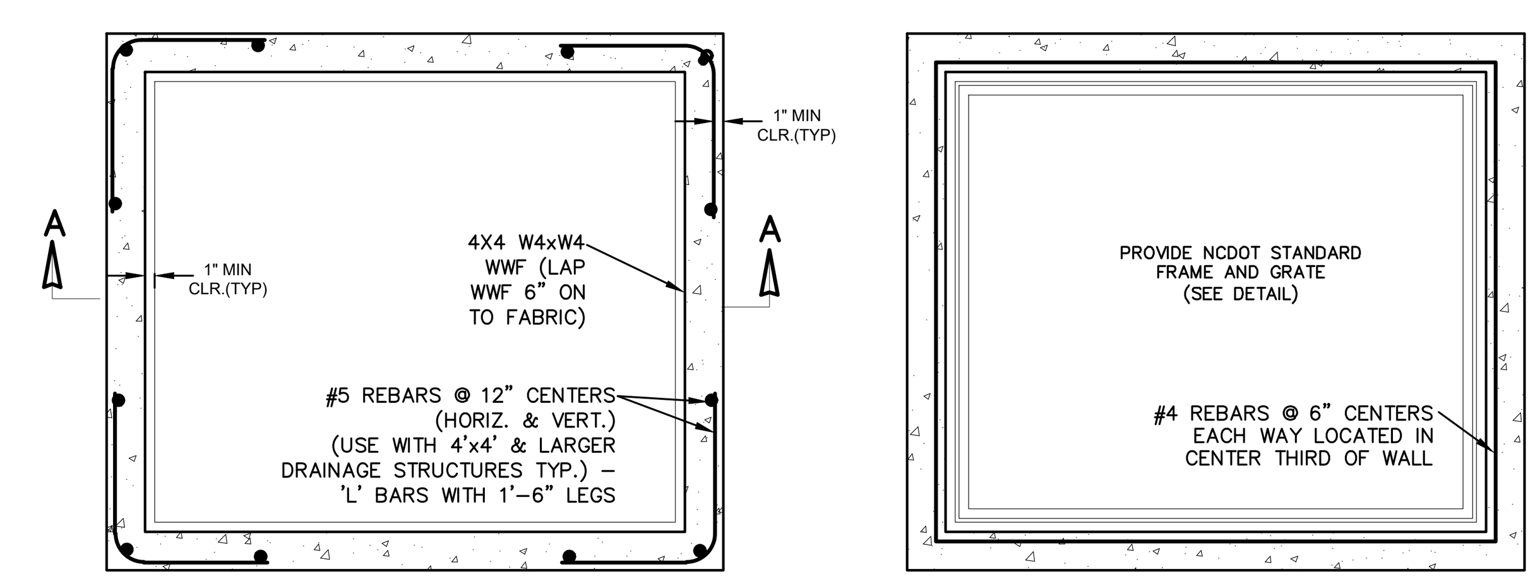
(ALL PROPOSED H.D.P.E. PIPING SHALL BE DOUBLE WALL, ADS N-12 TYPE OR APPROVED EQUAL)

GENERAL PIPE INSTALLATION NOTES:

1. ALL EXCAVATIONS SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE CONSTRUCTION STANDARDS FOR EXCAVATIONS IN OSHA "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION", CHAPTER XV11 OF TITLE 29, CFR, PART 1926. THE CONTRACTOR SHALL HAVE A COMPETENT PERSON ON THE JOB AT ALL TIMES AND SHALL EMPLOY A PROFESSIONAL ENGINEER TO ACT UPON ALL PERTINENT MATTERS OF THE WORK.
2. DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.
3. THE PIPE CULVERT INSTALLATION SHALL BE INSTALLED IN ACCORDANCE WITH NCDOT TYPICAL STANDARD DETAIL 300D01.
   I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
   O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
   H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT OR THE BOTTOM OF THE PAVEMENT STRUCTURE AT THAT POINT.



BASE UNIT SECTION A-A



PLAN VIEW OF BASE UNIT

PLAN VIEW OF RISER UNIT

PRECAST DRAINAGE STRUCTURE GENERAL NOTES

1. DESIGN SHALL CONFORM TO LATEST NCDOT 840.46 SPECIFICATIONS FOR "TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE".
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 4,000PSI.
3. USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A185 WELDED WIRE FABRIC WWF.
4. LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB TO 15'
5. PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704
6. ORIENT STRUCTURES SO THAT CORNERS WILL NOT BE CUT OR MODIFIED UNLESS ALLOWED BY DETAIL
7. PRECAST ALL ELEMENTS TO MEET ASTM C913
8. FRAME AND GRADE HEIGHT MAY BE ADJUSTED IN ACCORDANCE WITH STANDARD 840.25
9. PROVIDE PRECAST STRUCTURES OVER 4'-0" IN DEPTH WITH STEPS 12" ON CENTERS PER 840.66
10. WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR IF THE SAME MIN. AREA OF STEEL IS PROVIDED.
11. SEAL JOINTS WITH AN APPROVED SEALANT (SECTION 840 OF NCDOT STANDARD SPECIFICATIONS)
12. LIMIT MAXIMUM STRUCTURE SIZES INSIDE CLEAR DIMENSIONS TO 6'-" X 6'-0"
13. THE OUTSIDE PIPE DIAMETER PLUS 2" IS MINIMUM STRUCTURE SIZE OR THE OPENING REQUIRED FOR FRAME AND GRATE, WHICHEVER IS GREATER.
14. ANY DEVIATIONS FROM THE APPROVED PLAN & SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

STANDARD TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE

NOT TO SCALE NCDOT STD 840.46

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

ROADWAY & CURBING
CONSTRUCTION DETAILS

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

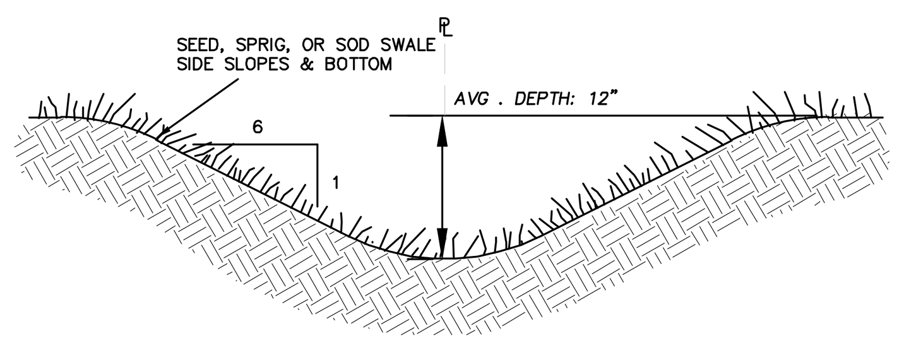
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

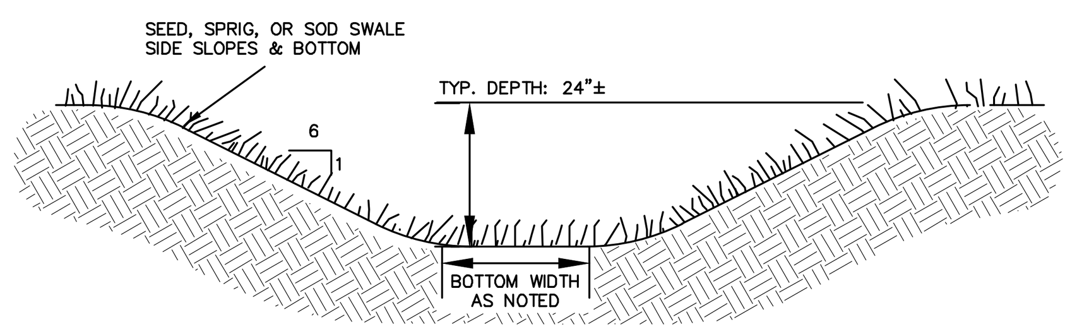
SHEET: 42 OF 49

CAD FILE: 468000B1

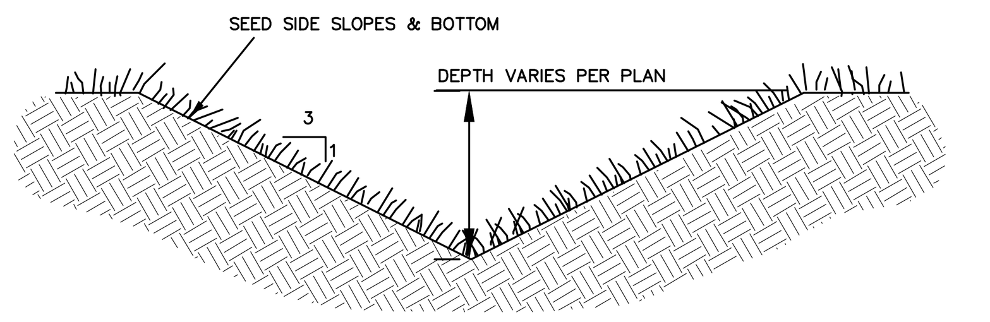
PROJECT NO: 4680



TYPICAL PROPERTY LINE SWALE
NOT TO SCALE SECTION VIEW

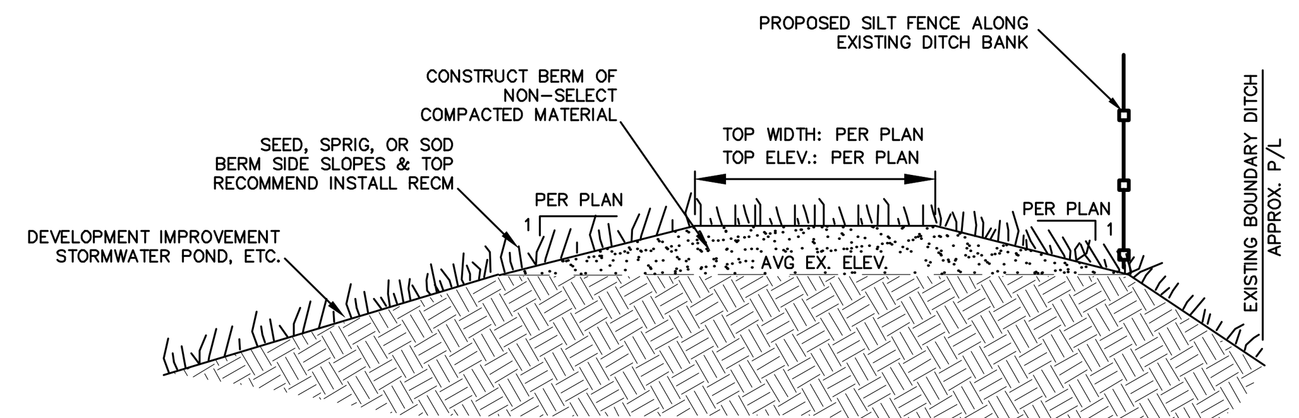


TYPICAL PRIMARY SWALE SECTION
NOT TO SCALE SLOPE PER INVERTS ON PLAN



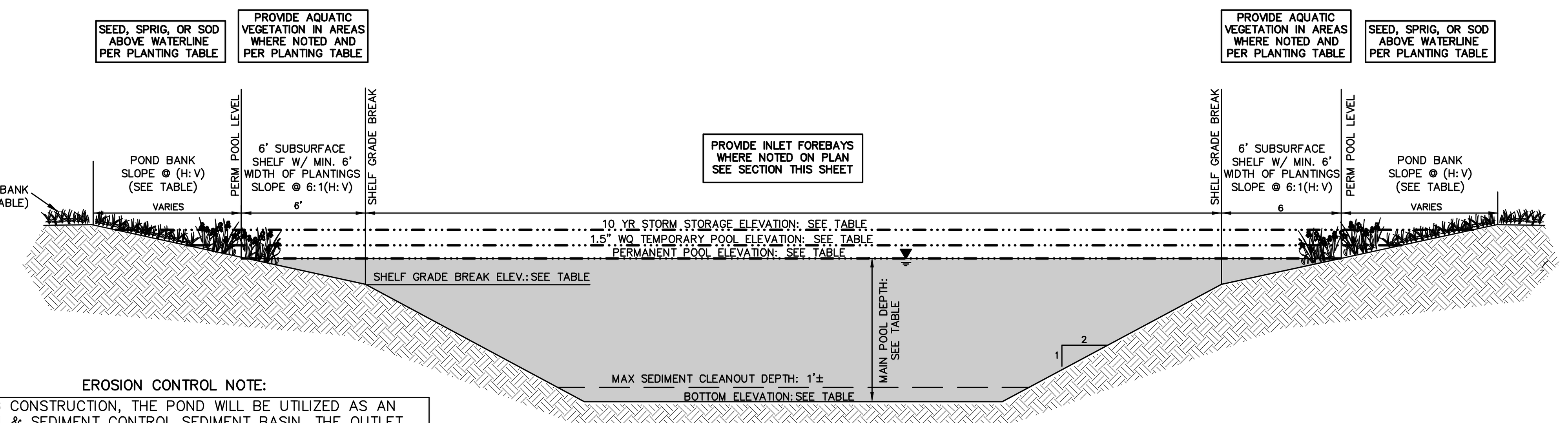
TYPICAL TEMPORARY DIVERSION DITCH SECTION
NOT TO SCALE SLOPE PER INVERTS ON PLAN

PERMANENTLY STABILIZED WITHIN 7 DAYS OF COMPLETION.



TYPICAL EARTHEN BERM SECTION
NOT TO SCALE LOCATION PER PLAN

EROSION CONTROL NOTE:
PERMANENTLY STABILIZED WITHIN 7 DAYS OF COMPLETION.



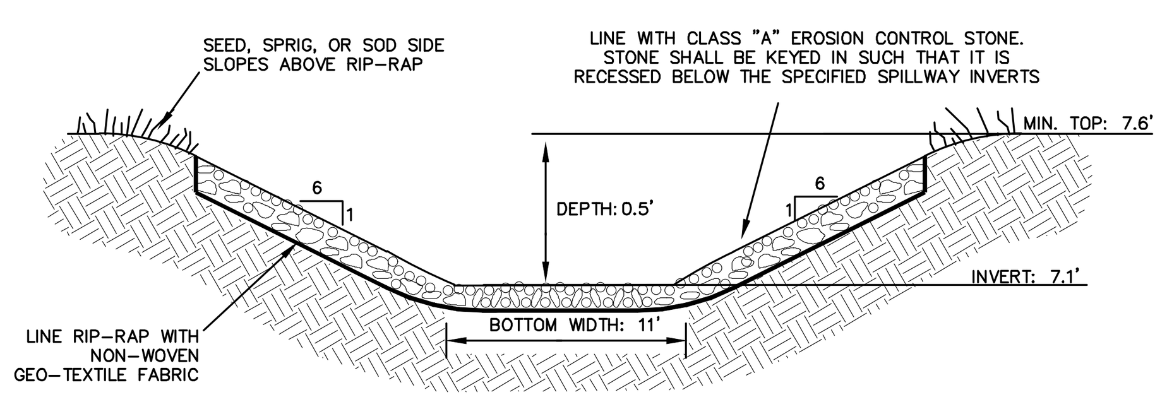
EROSION CONTROL NOTE:

DURING CONSTRUCTION, THE POND WILL BE UTILIZED AS AN EROSION & SEDIMENT CONTROL SEDIMENT BASIN. THE OUTLET STRUCTURE WILL ALSO REQUIRE SURFACE SKIMMER DEVICES AS DETAILED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS PROPERLY STABILIZED THE PONDS SHALL BE CLEANED AND RESTORED TO ITS DESIGN SPECIFICATIONS AND THE BANKS PERMANENTLY STABILIZED **WITHIN 7 DAYS.**

STORMWATER MANAGEMENT PONDS 4 & 5
TYPICAL MAIN POND CROSS SECTION
NOT TO SCALE

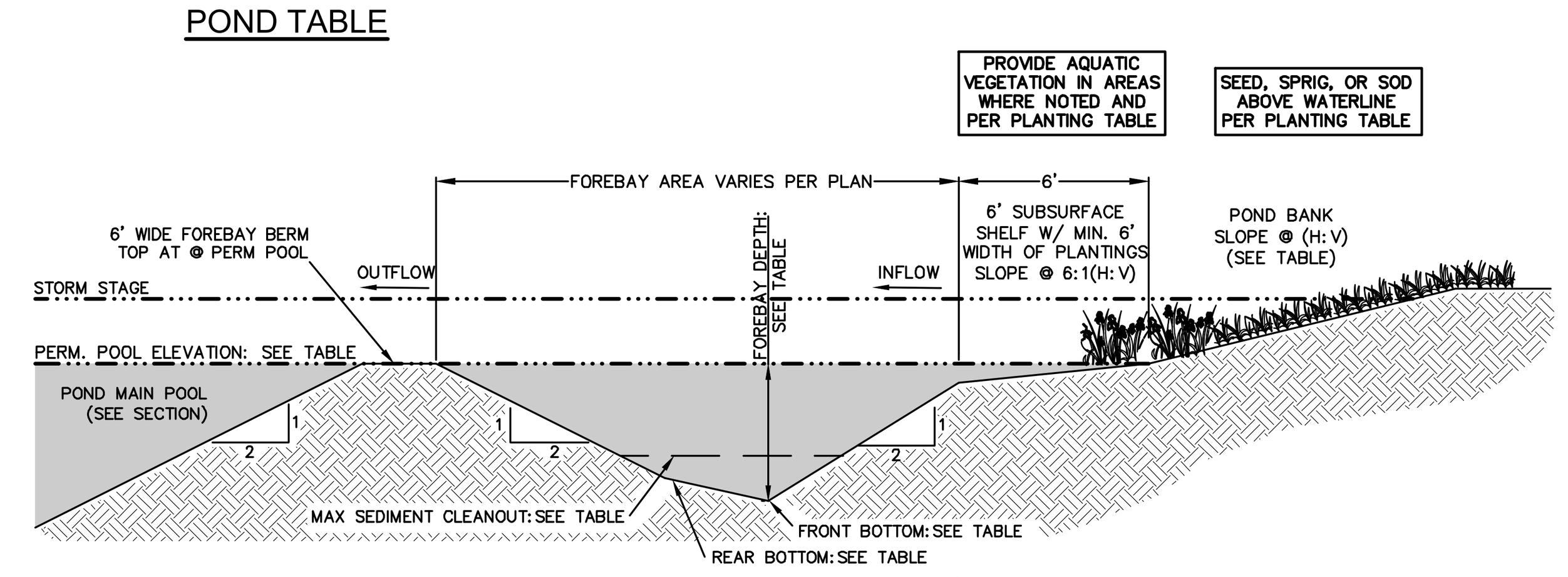
STORMWATER POND	MIN. TOP ELEV (FMSL)	100YR STORM STAGE (FMSL)	10YR STORM STAGE (FMSL)	PERM. POOL ELEV. (FMSL)	SHELL BREAK ELEV. (FMSL)	BOTTOM POND ELEV. (FMSL)	DEPTH (FT)	SIDE SLOPE ABOVE SHELF	SIDE SLOPE BELOW SHELF
1A–1F	7.50	7.23	5.96	3.00	2.00'	–18.0±	21.0±	6:1	2:1
2	8.00	7.67	6.00	4.00	3.00'	–21.0±	25.0±	6:1	2:1

POND TABLE



RIP-RAP LINED OVERFLOW SPILLWAY SECTION
NOT TO SCALE

EROSION CONTROL NOTE:
PERMANENTLY STABILIZED WITHIN 7 DAYS OF COMPLETION.



NOTE: ACCUMULATED SEDIMENT SHOULD BE REMOVED DOWN TO THE FOREBAY'S ORIGINAL DESIGN DEPTH.

SEDIMENT FOREBAY CROSS SECTION
(LOCATIONS AS DENOTED ON PLAN)

STORMWATER POND	PERM. POOL ELEV. (FMSL)	MAX SEDIMENT CLEAN OUT ELEV. (FMSL)	FRONT BOTTOM ELEV. (FMSL)	REAR BOTTOM ELEV. (FMSL)	FOREBAY DEPTH (FT)
1A	3.0	–1.0	–18.0±	–18.0±	21.0'±
2	4.0	–1.0	–21.0±	–21.0±	25.0'±

FOREBAY TABLE

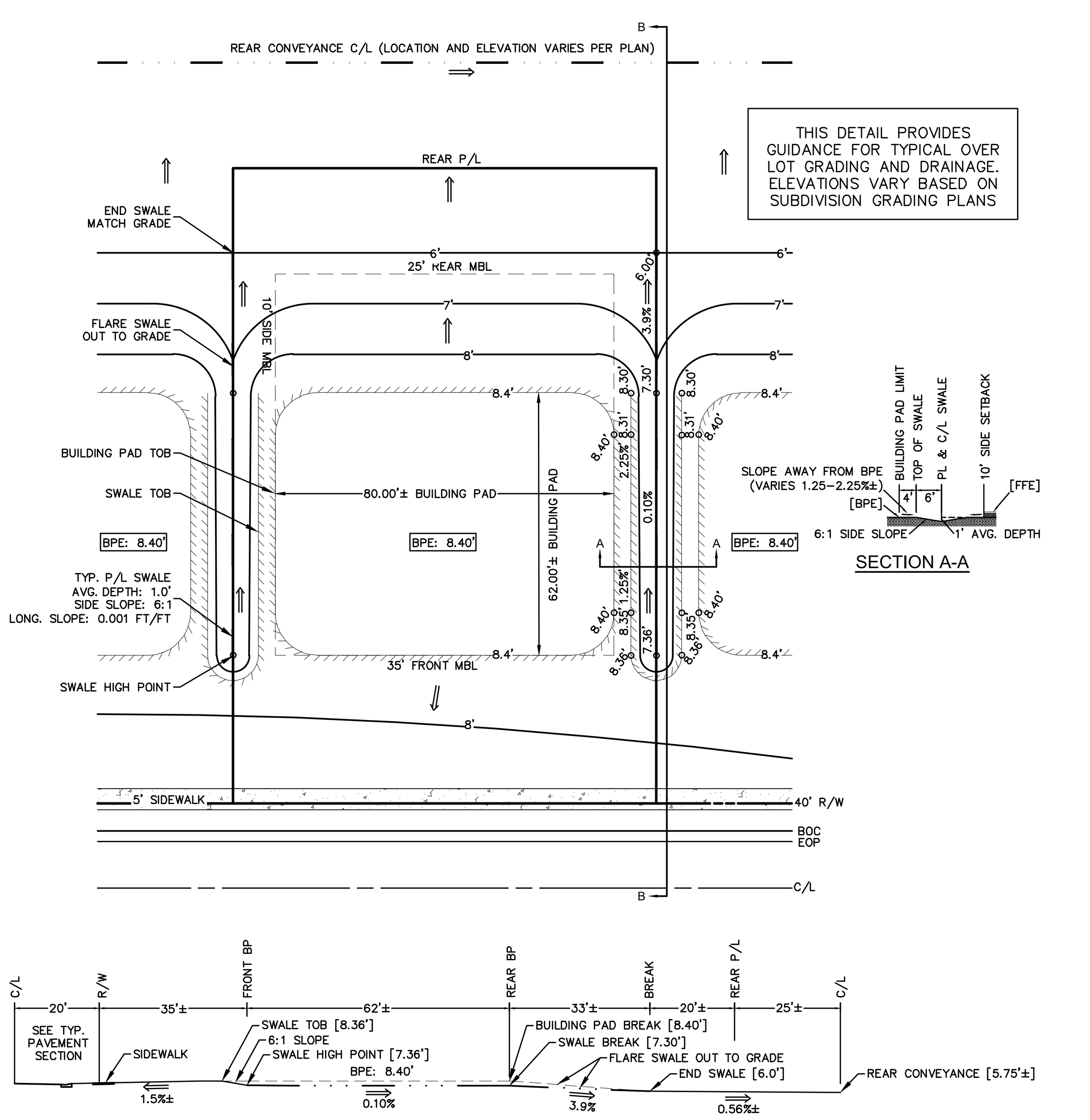
BMP CONSTRUCTION SEQUENCE NOTES:
THE FOLLOWING SEQUENCE IS IN ADDITION TO THE **"CONSTRUCTION SEQUENCE SCHEDULE"** PROVIDED UNDER THE EROSION AND SEDIMENT CONTROL SPECIFICATIONS.

1. THE POND SHALL BE CONSTRUCTED AS DIRECTED ON THE PLAN AND DETAILS. PERIMETER SLOPE IMPROVEMENTS SHALL BE STABILIZED WITH TEMPORARY VEGETATION WITHIN 7 DAYS OF CONSTRUCTION. THIS WILL CREATE A TEMPORARY SEDIMENT BARRIER DURING PROJECT CONSTRUCTION. A GOOD TEMPORARY MEANS OF STABILIZATION IS A WET HYDROSEED MIX.
2. THE POND MAY BE OVER EXCAVATED TO OBTAIN SUITABLE MATERIALS FOR CONSTRUCTION OF THE PROJECT. UNSUITABLE OVERBURDEN MATERIALS MAY BE PLACED BACK INTO THE POND, HOWEVER, THE FINAL BOTTOM SHALL NOT EXCEED THE ELEVATION NOTED ON THE PLAN AND DETAILS.
3. DURING CONSTRUCTION, THE POND WILL BE UTILIZED AS AN EROSION & SEDIMENT CONTROL SEDIMENT BASIN. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS PROPERLY STABILIZED THE POND SHALL BE CLEANED AND RESTORED TO ITS DESIGN SPECIFICATIONS AND THE BANKS PERMANENTLY STABILIZED **WITHIN 7 DAYS.**
4. FINAL PERMANENT WETLAND VEGETATION SHALL BE INSTALLED AND STABILIZED WITHIN 14 DAYS OF FINAL BMP GRADING. PLANTINGS SHALL BE IN ACCORDANCE WITH THE PLANTING SPECIFICATIONS PROVIDED AND ANY AMENDMENTS DETERMINED IN THE ABOVE SEQUENCE.

PLANTING TABLE

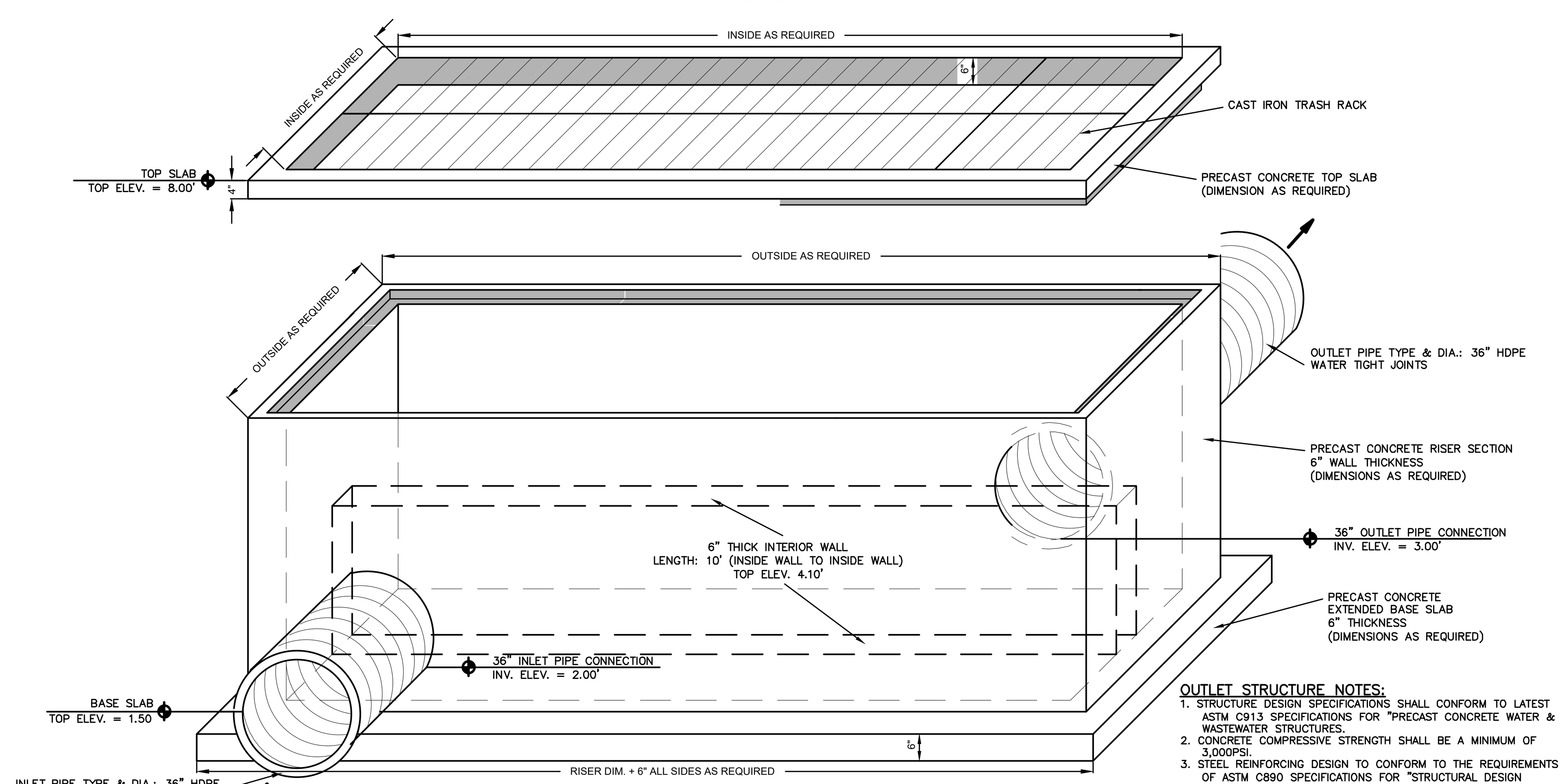
SHELF ZONE	PLANT SPECIES	MAX. PLANT SPACING	CONTAINER CLASS
BELOW PERM. POOL MINIMUM OF 3 SPECIES (SEE PLAN FOR LOCATIONS)	CHELON GLABRA – WHITE TURTLEHEAD EUPATORIADEPHUS FISTULOSUS – JOE PYE WEED HIBISCUS LAEVIS – HALBERDLEAF ROSEMALLOW LOBELIA CARDINALIS – CARDINAL FLOWER RHYNCHOSPORA COLORATA – STARRUSH WHITETOP SACCHARUM BALDWINII – NARROW PLUMEGRASS (OR APPROVED EQUAL) **(WETLAND SEED MIXES SHALL NOT BE USED)**	50 PLANTS PER 200 S.F 2' ON–CENTER	MINIMUM 4 CUBIC INCH PREFERED 6.5 CUBIC INCH+
POND BANK AROUND PERIMETER OF BMP ABOVE PERMANENT POOL	TIFWAY 419 – HYBRID BERMUDA GRASS EREMOCHLOA OPHIUROIDES – CENTIPEDEGRASS (OR APPROVED EQUAL) **(TREES, WOODY SHRUBS AND CLUMPING GRASSES SHALL NOT BE USED)**	AS REQUIRED PER SUPPLIER SPECIFICATIONS	N/A

NOTE: WETLAND PLANTS INC. (ALSO COASTAL PLAIN CONSERVATION NURSERY) IS A RECOMMENDED SOURCE FOR WETLAND PLANTS ON THIS PROJECT. THE NURSERY IS LOCATED AT 812 DRUMMONDS POINT RD. EDENTON, NC PHONE NUMBER: (252) 482–5707. THE PLANTINGS LISTED IN THE TABLE ABOVE ARE RECOMMENDATIONS SPECIFIC TO THIS PROJECT. ALTERNATE SPECIES MAY BE UTILIZED AFTER PROPER REVIEW AND APPROVAL BY ENGINEER.



SECTION B-B

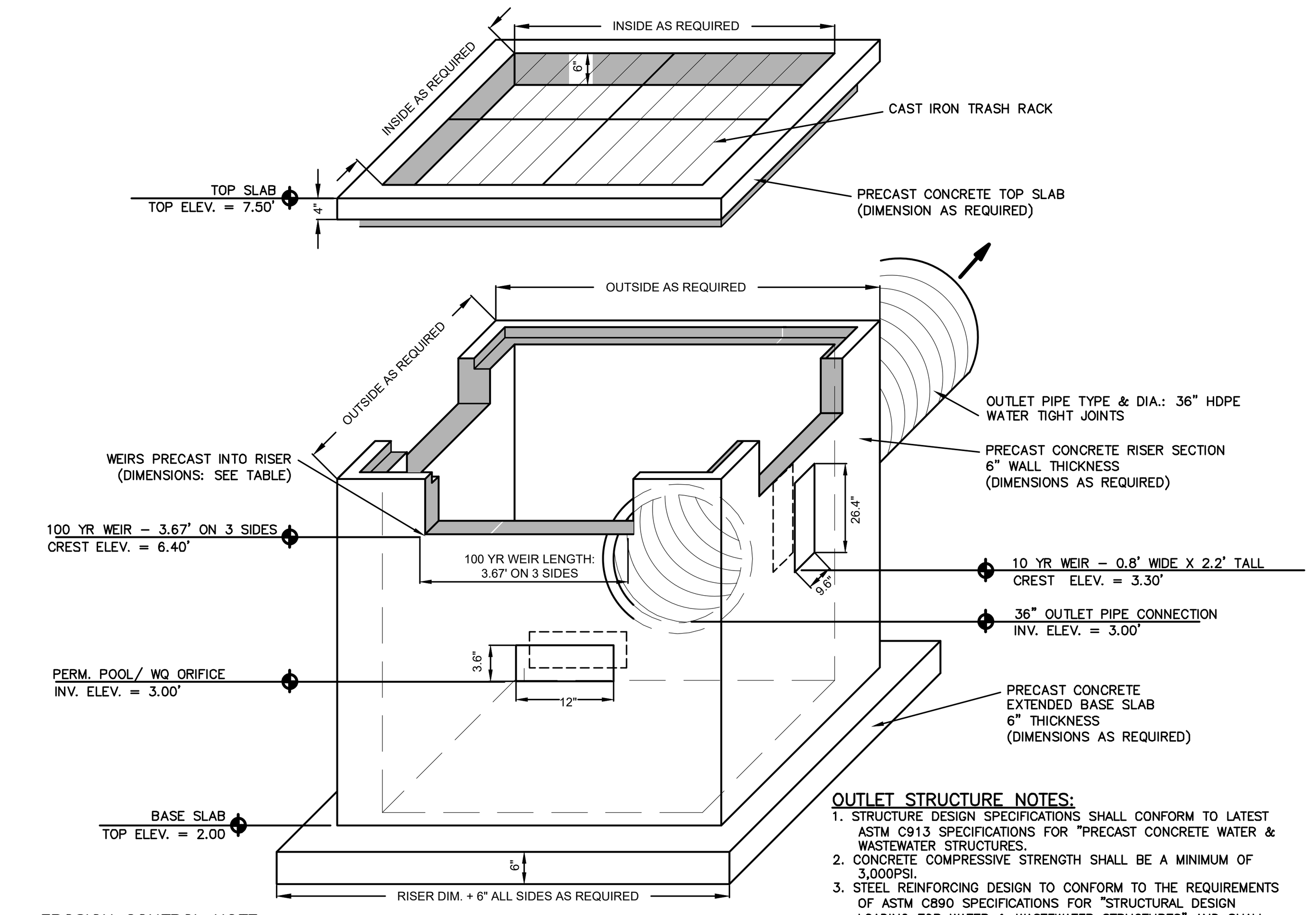
TYPICAL LOT GRADING DETAIL
SCALE: 1" = 30'



OUTLET CONTROL STRUCTURE - 03
NO SCALE LOCATION AS NOTED ON PLAN

THE CONTRACTOR SHALL CONFIRM ALL STRUCTURE DIMENSIONS AND COORDINATE WITH MANUFACTURER BEFORE FABRICATION

OUTLET STRUCTURE NOTES:
1. STRUCTURE DESIGN SPECIFICATIONS SHALL CONFORM TO LATEST ASTM C913 SPECIFICATIONS FOR "PRECAST CONCRETE WATER & WASTEWATER STRUCTURES.
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 3,000PSI.
3. STEEL REINFORCING DESIGN TO CONFORM TO THE REQUIREMENTS OF ASTM C890 SPECIFICATIONS FOR "STRUCTURAL DESIGN LOADING FOR WATER & WASTEWATER STRUCTURES" AND SHALL UTILIZE GRADE 60 RE–BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615 OR WWF CONFORMING TO THE REQUIREMENTS OF ASTM A185 OR BOTH.
4. PIPE PENETRATION TO BE AS SPECIFIED. PIPE TO BE INSTALLED AS PER NCDOT STANDARDS FOR MORTAR JOINT CONNECTIONS.
5. JOINTS TO BE SEALED WITH BUTYL RUBBER JOINT SEALANT CONFORMING TO THE REQUIREMENTS OF ASTM C990, OR MORTAR AS PER NCDOT REQUIREMENTS OR BOTH.
6. ANY DEVIATIONS FROM THE APPROVED PLAN & SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.



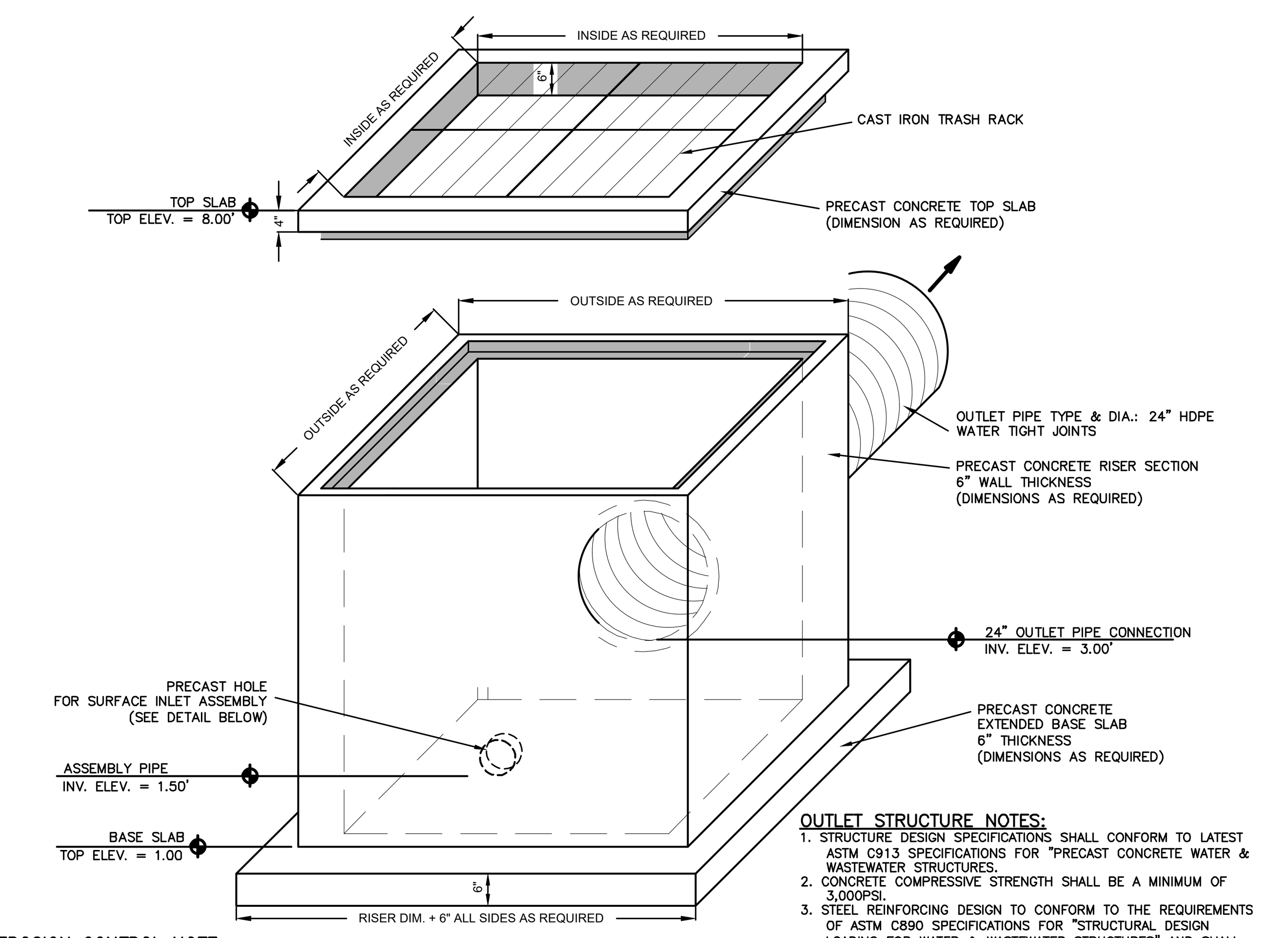
EROSION CONTROL NOTE:
SKIMMER REQUIRED

DURING CONSTRUCTION, AND UNTIL THE SITE IS STABILIZED, THE WEIRS ON THE DRAWDOWN STRUCTURE SHALL BE TEMPORARILY SEALED AND FITTED WITH AN ADAPTER TO ATTACH A TEMPORARY SURFACE SKIMMER DEVICE. (SEE SKIMMER DETAIL ON SHEET 18)

OUTLET CONTROL STRUCTURE - 01
NO SCALE LOCATION AS NOTED ON PLAN

THE CONTRACTOR SHALL CONFIRM ALL STRUCTURE DIMENSIONS AND COORDINATE WITH MANUFACTURER BEFORE FABRICATION

OUTLET STRUCTURE NOTES:
1. STRUCTURE DESIGN SPECIFICATIONS SHALL CONFORM TO LATEST ASTM C913 SPECIFICATIONS FOR "PRECAST CONCRETE WATER & WASTEWATER STRUCTURES.
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 3,000PSI.
3. STEEL REINFORCING DESIGN TO CONFORM TO THE REQUIREMENTS OF ASTM C890 SPECIFICATIONS FOR "STRUCTURAL DESIGN LOADING FOR WATER & WASTEWATER STRUCTURES" AND SHALL UTILIZE GRADE 60 RE–BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615 OR WWF CONFORMING TO THE REQUIREMENTS OF ASTM A185 OR BOTH.
4. PIPE PENETRATION TO BE AS SPECIFIED. PIPE TO BE INSTALLED AS PER NCDOT STANDARDS FOR MORTAR JOINT CONNECTIONS.
5. JOINTS TO BE SEALED WITH BUTYL RUBBER JOINT SEALANT CONFORMING TO THE REQUIREMENTS OF ASTM C990, OR MORTAR AS PER NCDOT REQUIREMENTS OR BOTH.
6. ANY DEVIATIONS FROM THE APPROVED PLAN & SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.



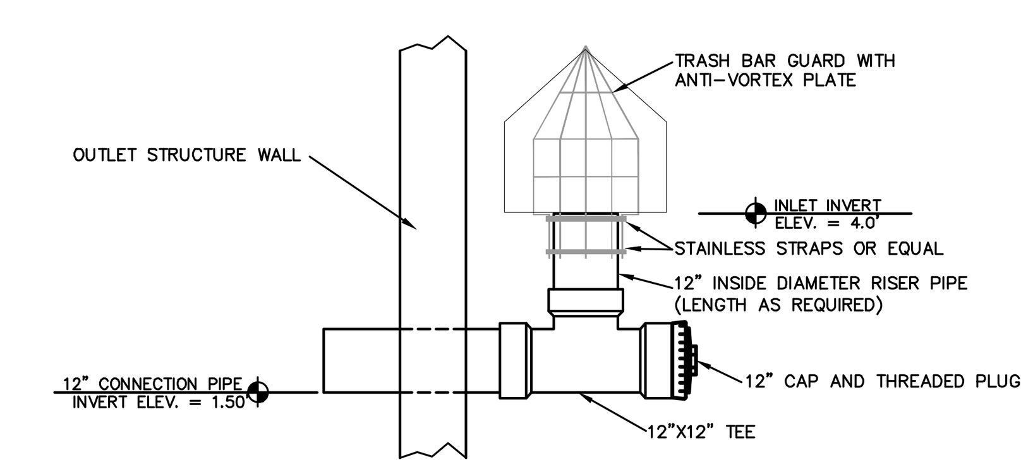
EROSION CONTROL NOTE:
SKIMMER REQUIRED

DURING CONSTRUCTION, AND UNTIL THE SITE IS STABILIZED, THE WEIRS ON THE DRAWDOWN STRUCTURE SHALL BE TEMPORARILY SEALED AND FITTED WITH AN ADAPTER TO ATTACH A TEMPORARY SURFACE SKIMMER DEVICE. (SEE SKIMMER DETAIL ON SHEET 18)

OUTLET CONTROL STRUCTURE - 02
NO SCALE LOCATION AS NOTED ON PLAN

THE CONTRACTOR SHALL CONFIRM ALL STRUCTURE DIMENSIONS AND COORDINATE WITH MANUFACTURER BEFORE FABRICATION

OUTLET STRUCTURE NOTES:
1. STRUCTURE DESIGN SPECIFICATIONS SHALL CONFORM TO LATEST ASTM C913 SPECIFICATIONS FOR "PRECAST CONCRETE WATER & WASTEWATER STRUCTURES.
2. CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 3,000PSI.
3. STEEL REINFORCING DESIGN TO CONFORM TO THE REQUIREMENTS OF ASTM C890 SPECIFICATIONS FOR "STRUCTURAL DESIGN LOADING FOR WATER & WASTEWATER STRUCTURES" AND SHALL UTILIZE GRADE 60 RE–BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615 OR WWF CONFORMING TO THE REQUIREMENTS OF ASTM A185 OR BOTH.
4. PIPE PENETRATION TO BE AS SPECIFIED. PIPE TO BE INSTALLED AS PER NCDOT STANDARDS FOR MORTAR JOINT CONNECTIONS.
5. JOINTS TO BE SEALED WITH BUTYL RUBBER JOINT SEALANT CONFORMING TO THE REQUIREMENTS OF ASTM C990, OR MORTAR AS PER NCDOT REQUIREMENTS OR BOTH.
6. ANY DEVIATIONS FROM THE APPROVED PLAN & SPECIFICATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.



SURFACE INLET ASSEMBLY DETAIL
NO SCALE

Bissell Professional Group
Firm License # C–956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261–3266
FAX (252) 261–1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

STOMWATER STRUCTURES
CONSTRUCTION DETAILS

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

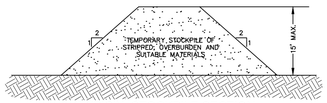
REVISIONS

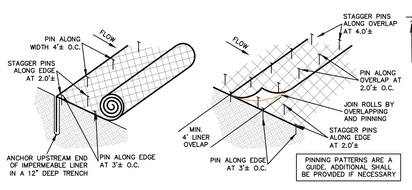
NO.	DATE	DESCRIPTION	BY
1	7-2-24	OVERFLOW SPILLWAY DETAIL	DMK
2	9-20-24	OCS-03 DETAIL	DMK

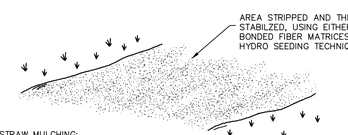
PRELIMINARY
DO NOT USE FOR CONSTRUCTION

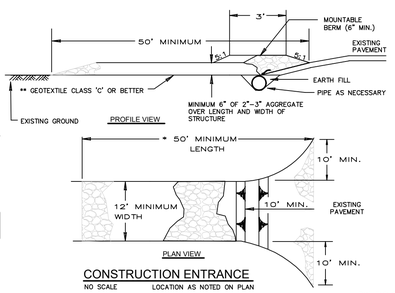
DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

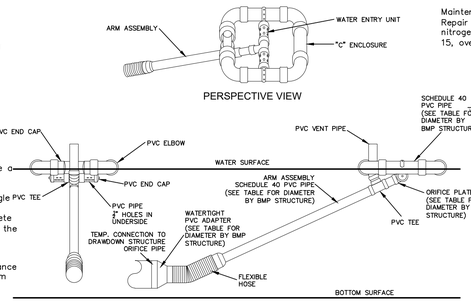
SHEET: 43 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

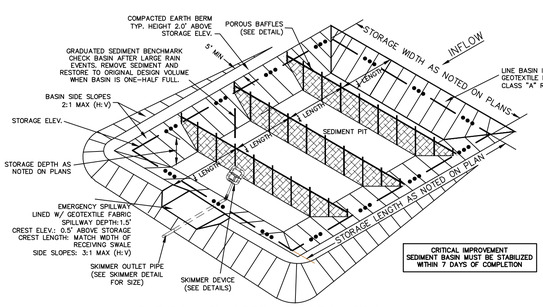


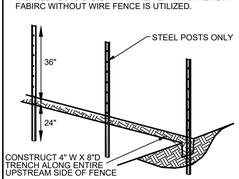


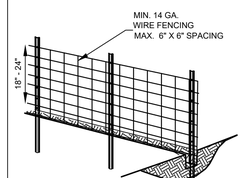


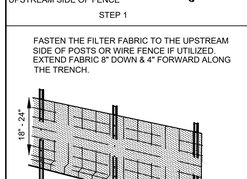


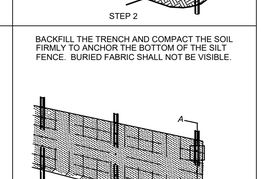












GENERAL PROJECT NOTES:

1. PROJECT NAME: FLORA FARMS PHASES 1-2
   MOYOCK, CURRITUCK COUNTY, NORTH CAROLINA
2. DEVELOPER: NORTH-SOUTH DEVELOPMENT GROUP, LLC
   417 CARATOKE HWY, UNIT D
   MOYOCK, NC 27929
3. PROJECT DESCRIPTION: RESIDENTIAL SUBDIVISION
4. NEAREST RECEIVING STREAM: ROWLAND CREEK CANAL - INDEX NUMBER: 30-1-2-2-5-1-2-1
5. STREAM CLASSIFICATION: C; Sw; RIVER BASIN: PASQUOTANK
6. PROJECT AREA TABULATION:

TOTAL PROPERTY AREA :	202.19 AC.	
PRIOR APPROVED DISTURBED AREA :	98.00 AC.	CURRI-2022-018
ADDITIONAL PROPOSED DISTURBED AREA :	9.00 AC.	
TOTAL DISTURBED AREA :	107.00 AC.	

AREA CALCULATION NOTE:
All areas have been calculated utilizing properties within the Autocad software.

MATERIAL BALANCE NOTE:
All excavated material occurring during the course of construction shall remain on-site for roadway construction and lot grading. See SCHEDULE OF LAND DISTURBING ACTIVITIES provided on Sheet 13 of this set for an estimated cut fill material balance for the project.

WETLAND NOTE:
The property contains 404 jurisdictional wetlands as noted on the cover sheet.

STABILIZATION NOTE:
The angle of graded slopes and fills shall be no greater than the angle that can be retained by vegetative cover or other adequate erosion control devices or structures.
In any event, all disturbed areas left exposed will, WITHIN 14 CALENDAR DAYS OF COMPLETION of any phase of grading, be planted or otherwise provided with temporary or permanent ground cover, devices, or structures sufficient to restrain erosion.
Additionally, certain critical areas as identified on the plan, such as, but not limited to, perimeter dikes, swales, slopes steeper than 3:1, and areas located within High Quailty Water Zones, must be temporarily or permanetly stabilzed WITHIN 7 CALENDAR DAYS OF COMPLETION of any phase of grading in these areas.
A permanent ground cover for all disturbed areas must be provided WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (whichever is shorter) following completion of construction or development.

CONSTRUCTION SEQUENCE SCHEDULE

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
Construction Access— Construction entrance, construction routes, equipment parking areas	First land—disturbing activity—Stabilize bare areas immediately with gravel & temporary vegetation as construction takes place.
Sediment Traps & Barriers Basin traps, sediment fences, & outlet protection	Install principal basins after construction site is accessed. Install additional traps and barriers as needed during grading.
Runoff Control— Diversions, perimeter dikes, water bars, and outlet protection	Install key practices after principal sediments traps and before land grading. Install additional runoff—control conveyance measures during grading.
Runoff Conveyance System— Stabiles stream banks, storm drains, channels, Inlet & outlet protection, slope drains	Where necessary, stabilize stream banks as early as possible. Install principal runoff conveyance system with runoff—control measures. Install remainder of system after grading.
Land Clearing & Grading— Site preparation— cutting, filling & grading, sediment traps, barriers, diversions, drains, surface roughening	Begin major clearing and grading after principal & key runoff—control measures area installed. Clear borrow & disposal areas as needed. Install additional control measures as grading progresses. Mark trees & buffer areas for preservation.
Surface Stabilization— Temporary & permanent seeding, mulching, sodding, rip rap.	Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or complete.
Building Construction— Buildings, utilities, paving.	Install necessary erosion & sedimentation control practices as work takes place.
Landscaping & Final Stabilization— Topsoiling, trees & shrubs, permanent seeding, mulching, sodding, rip rap	Stabilize all open areas, including borrow & spoil areas. Remove & stabilize all temporary control measures.

LAND GRADING CONSTRUCTION SPECIFICATIONS

1. Construct & maintain all erosion & sedimentation control practices & measures in accordance with the approved sedimentation control plan and construction schedule.

2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.

3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.

4. Clear & grub areas to be filled to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of fill.

5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.

6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.

7. Do not incorporate frozen material or soft, mucky, or highly compressible materials into fill slopes.

8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.

9. Keep diversions and other water conveyance measures free of sediment during all phases of development.

10. Handle seeps or springs encountered during construction in accordance with approved methods.

11. Following completion of any phase of grading, provide a groundcover (temporary or permanent) on all exposed slopes within 14 calendar days, or 7 calendar days in critical areas identified on the plan; and, a permanent groundcover for all disturbed areas within 15 working days or 90 calendar days (whichever is shorter) following completion of construction or development.

12. Provide adequate protection from erosion for all topsoil stockpiles, borrow areas, and spoil areas.

MAINTENANCE
Periodically check all graded areas & the supporting erosion & sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversions and other water—disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small—eroded areas before they become significant gullies is an essential part of an effective erosion & sedimentation control plan.

PERMANENT SEEDING

The purpose of permanent seeding is to reduce erosion and decrease sediment yield from disturbed areas, and to permanently stabilize such areas in a manner that is economical, adapts to site conditions, and allows selection of the most appropriate plant materials. These areas must be seeded or planted within 15 working days or 90 calendar days after final grade is reached, unless temporary stabilization is applied.

PERMANENT SEEDING SPECIFICATIONS

Seeding Recommendations for Summer
SEEDING DATES — April to July
SEEDING MIXTURE

Species	Rate
Common bermudagrass	10/1,000 sf (sprigs) 1—2 lb/1,000 sf (seed) SOD (See Sodding Notes)

Seeding Recommendations for Early Fall through Early Spring
SEEDING DATES — August to March (early fall and spring recommended)

Species	Rate
Kentucky 31 Tall Fescue	6 lb/1,000 sf (broadcast seed)

SEEDING NOTES—
1. Sprig or sod. Moisture is essential during initial establishment. Sod must be kept watered for 2—3weeks, but can be planted earlier or later than sprigs.

Soil Amendments—
It is highly recommended that soils be tested and amended as found necessary. If a sois are not tested follow these recommendations:
Apply 3,000 lb/acre of ground agricultural limestone and 500 lb/acre of 10—10—10 starter fertilizer, or 50 lb/acre nitrogen from turf—type slow—release fertilizer. Add 25—50 lb/acre nitrogen at 2—3 week intervals through midsummer.

Sprigging—
Plant sprigs in furrows with a tractor—drawn transplanter, or broadcast by hand. (Not recommended for Tall Fescue)

Furrows should be 4—6 inches deep and 2 feet apart. Place sprigs about 2 ft. apart in a row with one end at or above ground level.

Broadcast at rates shown above, and press sprigs into the top 1/2—2 inches of soil with a disk set straight so that sprigs are not brought back toward the surface.

Mulch—
Do not mulch Bermuda Grass. For Tall Fesuce seed, apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Water as needed. Mow bermuda to 3/4 to 1—inch height and tall fescue to 2.5 — 3.5 inch height. Topdress bermuda with 40 lb/acre nitrogen in April, 50 lb in May, 50 lb in June, 50 lb in July, and 25 lb in August. Top dress tall fescue in mid September,again in November and February with turf—grade 3—1—2 or 4—1—2 ratio turf—grade fertilizer. Fertilize with 1 lb of actual nitrogen per 1,000 sf. Do not fertilze tall fescue between Mid March and Early September.

TEMPORARY SEEDING

The purpose of temporary seeding is to temporarily stabilize denuded areas that will not be brought to final grade or permanently seeded for a period of more than 14 calendar days, **or 7 days in critical areas indentified on the plan.**

TEMPORARY SEEDING SPECIFICATIONS

Seeding Recommendations for Late Winter & Early Spring
SEEDING DATES— December 1 to April 15
SEEDING MIXTURE

Species	Rate (lb/acre)
Winter Rye (grain)	120 (Annual Ryegrass shall not be used)
Annual Lespedeza (Kobe)	50

*Omit Annual Lespedeza when duration of temporary cover is not to extend beyond June

Soil Amendments—
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10—10—10 fertilizer.

Mulch—
Apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Refertilize if growth is not fully adequate. Reseed, fertilize and mulch immediately following erosion or other damage.

Seeding Recommendations for Summer
SEEDING DATES— April 15 to August 15
SEEDING MIXTURE

Species	Rate (lb/acre)
German Millet	40

Soil Amendments—
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10—10—10 fertilizer.

Mulch—
Apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Refertilize if growth is not fully adequate. Reseed, fertilize and mulch immediately following erosion or other damage.

Seeding Recommendations for Fall
SEEDING DATES— August 15 to December 30
SEEDING MIXTURE

Species	Rate (lb/acre)
Winter Rye (grain)	120

Soil Amendments—
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10—10—10 fertilizer.

Mulch—
Apply 4,000—lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch—anchoring tool. A disk with blades set nearly straight can be used as a mulch—anchoring tool.

Maintenance—
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 ld/acre Kobe Lespedeza in late February or Early March.

SODDING

The purpose of permanent seeding is to prevent erosion and damage from sediment and runoff by stabilizing the soil surface with permanent vegetation for the purpose of:
—the provision of immediate vegetative cover in critical areas
—to stabilize disturbed areas with a suitable plant material that cannot be established by seed.
—to stabilize drainage ways & channels and other areas of concentrated flow where flow velocities will not exceed that specified grass lining.

SODDING SPECIFICATIONS

Sod Quality
—Sod should be machine cut at a uniform depth of 1/2—2 inches
—Sod should not have been cut in excessively wet or dry weather.
—Sections of sod should be standard size as determined by the supplier, uniform, and untorn.
—Sections of sod should be strong enough to support their own weight and retain their size and shape when lifted by one end.
—Harvest, delivery, and installation of sod should take place within a period of 36 hours.

Soil Amendments—
Apply lime and fertilizer according to soil tests or apply 2 tons/acre of pulverized agricultural limestone and 1,000 lb/acre 10—10—10 fertilizer in the fall, or 5—10—10 in spring.

Prior to laying sod, clear the soil surface of trash, debris, roots, branches, stones, and clods larger than 2 inches in diameter. Fill or level low spots in order to avoid standing water. Rake or harrow the site to achieve a smooth and level final grade. Complete soil preparation by rolling or cultipacking to firm soil.

Sod Installation—
1. Moistening the sod after it is unrolled helps maintain viability. Store in shade during installation.
2. Rake the soil surface to break the crust just before laying sod. During the summer, lightly irrigate the soil, immediately before laying sod to cool the soil and reduce root burning & dieback.
3. Do not sod on grave, frozen soils, or soils that have been treated recently with sterilants or herbicides.
4. Lay the first row of sod in a straight line with subsequent rows placed parallel to and butting tightly against each other. Stagger strips in a brick—like pattern. Be sure that the sod is not stretched or overlapped and that all joints are butted tightly to prevent voids. Use a knife or sharp spade to trim and fit irregular shaped areas.
5. Install strips of sod with their longest dimension perpindicular to the slope. On slopes of 3:1 or greater, or wherever erosion may be a problem, secure sod with pegs or staples.
6. As sodding of clearly defined areas is completed, roll sod to provide good contact between roots and soil.
7. After rolling, irrigate until the soil is wet 4 inches below the sod.
8. Keep sodded areas moist to a depth of 4 inches until the grass takes root. This can be determined by tugging on the sod.
9. Mowing should not be attempted until the sod is firmly rooted, usually 2—3 weeks.

Sodded Waterways
1. Prepare soil as described above.
2. Lay sod strips perpindicular to the direction of flow, with the lateral joints staggered in a brick—like pattern. Butt edges tightly together.

Maintenance—
After the first week, water as necessary to maintain adequate moisture in the root zone & prevent dormancy of the sod.

Do not remove more than one—third of the shoot in any one mowing. Grass height should be maintained between 2—3 inches unless otherwise specified.

After first growing season, established sod requires fertilization, and may also require lime. Follow soil test recommendations.

TEMPORARY STONE CHECK DAM CONSTRUCTION SPECIFICATIONS:

1. CLEAR, GRUB, AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER AND STOCKPILE OR DISPOSAL OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA.

2. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN IN THE PLAN ON A FILTER FABRIC FOUNDATION.

3. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND LEVEL WHERE THE DAM ABUTS THE CHANNEL BANKS.

4. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.

5. ALL CUT AND FILL SLOPES SHOULD BE 2:1 OR FLATTER.

6. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.

7. MATERIAL USED IN THE STONE SECTION SHOULD BE A WELL—GRADED MIXTURE OF STONE WITH A d50 SIZE OF 9 INCHES(CLASS B EROSION CONTROL STONE IS RECOMMENDED) AND A MAXIMUM STONE SIZE OF 14 INCHES. THE STONE MAY BE MACHINE PLACED AND THE SMALLER STONES WORKED INTO THE VOIDS OF THE LARGER STONES. THE STONE SHOULD BE HARD, ANGULAR, AND HIGHLY WEATHER—RESISTANT.

8. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION.

9. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACES STONES.

MAINTENANCE OF TEMPORARY STONE CHECK DAMS:

INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS WHEN NEEDED.

REMOVE SEDIMENT ACCUMULATION BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION, ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

TYPICAL STOCKPILE SECTION

NOT TO SCALE SECTION VIEW

STOCKPILES HAVING 2:1 SIDE SLOPES ARE CONSIDERED CRITICAL AREAS. SEE STABILIZATION NOTES FOR TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS. LEVEL GRADE AREA AND STABILIZE AT COMPLETION

ROLLED LINER CONNECTION DETAIL

NOT TO SCALE SECTION VIEW

ROLLED EROSION CONTROL MATTING DETAIL

NO SCALE LOCATION AS NOTED ON PLAN

ROLLED EROSION CONTROL MATTING (R.E.C.M.) SPECIFICATIONS:
1. All areas identified on these plans as requiring an erosion control matting shall be lined with a protective covering to minimize erosion and protect seed until permanent vegetation is established.
2. Covering shall be composed of a bio or photo degradable material to minimize long term environmental impacts.
3. Mulching with straw or other organic materials can be utilized only when it will not impede the establishment of permanent vegetation. Mulches must be properly anchored which may be difficult in some environments. An example is straw mulch with jute netting stapled or pinned in place.
4. Pre—manufactured rolled erosion control products (RECP) are highly recommended for this application. RECP's shall be installed according to manufacturer specifications for channel linings. An example is a woven straw or wooden fiber Excelsior matting.

CONSTRUCTION ENTRANCE

NO SCALE LOCATION AS NOTED ON PLAN

CONSTRUCTION ENTRANCE SPECIFICATIONS
1. Length — minimum of 50' (*30' for single residence lot).
2. Width — 12' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
4. Stone — crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water — all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location — A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

DROP/CURB INLET PROTECTION

NOT TO SCALE ISOMETRIC VIEW

INLET PROTECTION SPECIFICATIONS:
INSPECT AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE DEBRIS FROM MESH AND REPLACE STONES AS NEEDED.

REMOVE ONCE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

STRAW MULCHING:
1. FOR AREAS OF SITE WITH LESS THAN 30% SLOPE; 2—3 BALES OF STRAW EQUALS 2—INCHES OF STRAW MULCH OVER 1000 SQARE FEET.
2. MULCH SHALL BE WEED FREE STRAW.

TO PROVIDE TEMPORARY SOIL STABILIZATION BY PLANTING GRASSES AND LEGUMES TO AREAS THAT WOULD REMAIN BARE FOR MORE THAN 14 CALENDAR DAYS, OR 7 DAYS IN INDENTIFIED CRITICAL AREAS, WHERE PERMANENT COVER IS NOT NECESSARY OR APPROPRIATE.

LAND DISTURBANCE & STABILIZATION DETAIL

NOT TO SCALE

NOTES
1. INSTALL THREE (3) COIR FIBER BAFFLES IN SEDIMENT BASINS AT DRAINAGE OUTLETS WITH A SPACING OF 1/4 THE BASIN LENGTH.
2. TWO (2) COIR FIBER BAFFLES SHALL BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 OF THE BASIN LENGTH.
3. TOP HEIGHT OF THE COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

POROUS COIR FIBER BAFFLE DETAIL

NOT TO SCALE

TYPICAL SKIMMER DETAIL

NOT TO SCALE LOCATION AS NOTED ON PLAN

SKIMMER	PVC ARM AND ENCLOSURE DIA.	ORIFICE PLATE DIA.	PVC ADAPTER
A	6 INCHES	1.7 INCHES	6 INCH X OCS—1
B	6 INCHES	4.9 INCHES	6 INCH X OCS—2
C	6 INCHES	3.0 INCHES	6 INCH X 48" P—334

SKIMMER TABLE

TEMPORARY STONE CHECK DAM CONSTRUCTION

NOT TO SCALE LOCATIONS AS NOTED ON PLAN

DETAIL MODIFIED FROM NCDENR EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL

CRITICAL IMPROVEMENT
SEDIMENT BASIN MUST BE STABILIZED
WITHIN 7 DAYS OF COMPLETION

TYPICAL DEWATERING BASIN DETAIL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS
1. PLACE TEMPORARY SEDIMENT CONTROL MEASURES BELOW BASIN AS NEEDED. CLEAR, GRUB AND STRIP AREA. PROPERLY DISPOSE OF OBJECTIONABLE MATERIAL
2. CONSTRUCT EMBANKMENT IN LIFTS OF 9 INCHES AND MACHINE COMPACT. ENSURE MATERIAL IS FREE OF ROOTS, WOOD AND OTHER OBJECTIONABLE MATERIALS
3. SHAPE BASIN TO SPECIFIED DIMENSIONS.
4. PLACE OUTLET BARREL ON FIRM, SMOOTH IMPERVIOUS SOIL FOUNDATION. DO NOT USE SAND, GRAVEL OR CRUSHED STONE. PLACE FILL MATERIAL AROUND PIPE SPILLWAY IN 4 INCH LIFTS AND COMPACT TO MATCH ADJACENT EMBANKMENT.
5. ASSEMBLE THE SKIMMER FOLLOWING MANUFACTURERS INSTRUCTIONS, OR AS DESIGNED
6. PROVIDE STONE OR TIMBER BED TO SET SKIMMER ON AND PREVENT SETTLEMENT INTO MUD. LAY ASSEMBLED SKIMMER ON BED WITH FLEXIBLE JOINT AT THE INLET OF THE OUTLET BARREL PIPE. ATTACHED SKIMMER AND OUTLET BARREL. BE SURE TO ATTACH A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO ACCESS THE SKIMMER FOR REMOVAL AND MAINTENANCE.
7. INSTALL SPILLWAY IN UNDISTURBED SOIL TO THE GREATEST EXTENT PRACTICABLE. ACHIEVE SPILLWAY DIMENSIONS PROVIDED. LINE SPILLWAY WITH LAMINATED PLASTIC OR IMPERVIOUS GEOTEXTILE FABRIC. SECURE EDGES WITH 8—INCH STAPLES OR PINS. FABRIC MUST WIDE ENOUGH TO COVER BOTTOM AND SIDES WITH ONE PIECE, NOT JOINTS OR SPLICES. FABRIC MUST BE LONG ENOUGH TO EXTEND UP, OVER AND DOWN ACROSS THE SPILLWAY AND EXIT ONTO STABLE GROUND. IF NECESSARY, MULTIPLE FULL WIDTH LENGTHS MAY BE USED WITH UPPER SECTIONS OVERLAPPING LOWER SECTIONS.
8. WATER MUST DISCHARGE INTO BASIN IN A MANNER TO PREVENT EROSION. LINE INLET WITH GEOTEXTILE FABRIC OR RIP—RAP STONE. USE TEMPORARY SLOPE DRAINS OR DIVERSION WITH OUTLET PROTECTION TO DIVERT RUNOFF TO THE UPPER END OF THE SEDIMENT BASIN.
9. INSTALL POROUS BAFFLES PER DETAILS PROVIDED
10. AFTER ALL DISTURBED AREAS TRIBUTARY TO THE BASIN HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH ADJOINING AREAS AND STABILIZE PROPERLY.

POSTS MUST BE 1.33 LB/LINEAR FT. STEEL WITH A MIN. LENGTH OF 5'. POST SHALL HAVE PROJECTIONS TO FACILITATE FASTENING OF FILTER FABRIC.

INSTALL POSTS 8' O.C. MAX WHEN STANDARD FABIRC & WIRE SUPPORT FENCE ARE UTILIZED.

INSTALL POSTS 6' O.C. MAX WHEN EXTRA STRENGTH FABIRC WITHOUT WIRE FENCE IS UTILIZED.

WHEN STANDARD STRENGTH FILTER FABRIC IS UTILIZED WIRE FENCING MUST ALSO BE INSTALLED ON UPSTREAM SIDE OF POSTS. EXTNED MAX. 24" ABOVE EXISTING GRADE TO BOTTOM OF TRENCH.

FASTEN THE FILTER FABRIC TO THE UPSTREAM SIDE OF POSTS OR WIRE FENCE IF UTILIZED. EXTEND FABRIC 8" DOWN & 4" FORWARD ALONG THE TRENCH.

BACKFILL THE TRENCH AND COMPACT THE SOIL FIRMLY TO ANCHOR THE BOTTOM OF THE SILT FENCE. BURIED FABRIC SHALL NOT BE VISIBLE.

1. USE SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461. FILTER FABRIC SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120°F.
2. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD OR EXTRA STRENGTH SYNTHETIC FILTER FABRIC. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE.
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FT MINIMUM OVERLAP TO THE NEXT POST.
4. SYNTHETIC FILTER FABRIC SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH MIN. 50 LB. TENSILE STRENGTH WIRE OR ZIP TIES AT TOP, MID—SECTION AND BOTTOM. FABRIC HEIGHT SHALL BE BETWEEN 18" MIN. TO 24" MAX. ABOVE GROUND LEVEL ON THE UPSLOPE SIDE OF THE POSTS. EXTRA STRENGTH FILTER FABRIC W/6' POST SPACING SHALL BE SECURELY FASTENED DIRECTLY TO POSTS.
5. 12 INCHES OF FILTER FABRIC SHALL BE BURIED IN AN EXCAVATED TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER. BACKFILL TRENCH WITH MECHANICALLY COMPACTED SOIL PLACED OVER THE FILTER FABRIC. DO NOT ATTACH FILTER FABRIC TO TREES.
6. SILT FENCE SHALL BE INSPECTED AT LEAST ONCE A WEEK & AFTER EACH RAINFALL EVENT. MAKE ANY REPAIRS IMMEDIATELY. SHOUD THE FABRIC COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
7. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
8. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

SECTION A-A

TYPICAL SILT FENCING DETAIL

NOT TO SCALE LOCATION AS NOTED ON PLAN

Bissell Professional Group
Firm License # C—956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261—3266
FAX (252) 261—1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

EROSION CONTROL DETAILS
CONSTRUCTION SEQUENCE

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK
CURRITUCK COUNTY
NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 44 OF 49

CAD FILE: 468000B1

PROJECT NO: 4680

S:\projects\4680 Flora Tract (Fost II)\dwg\Construction Drawings\468000B1.dwg 9/26/2024 Plotted: 9/26/2024 10:56 AM DWF6 ePlot.pc3

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

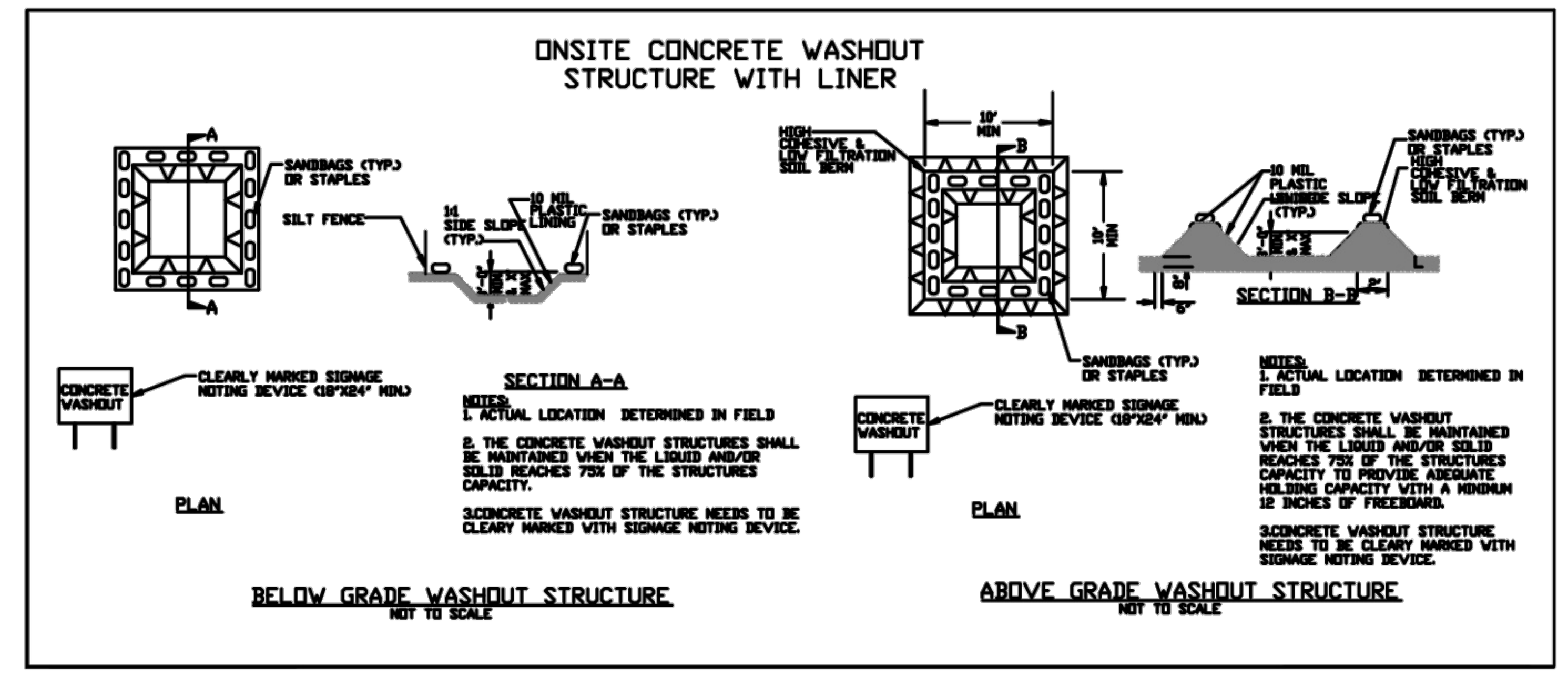
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA
Environmental Quality



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

NCG01 - GROUND STABILIZATION & MATERIALS HANDLING

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS: NO. | DATE | DESCRIPTION | BY

PRELIMINARY DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24 SCALE: AS NOTED
DESIGNED: BPG CHECKED: MSB
DRAWN: DMK APPROVED: MSB
SHEET: 45 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:

- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA
Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

NCG01 - SELF INSPECTION
RECORD KEEPING & REPORTING

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

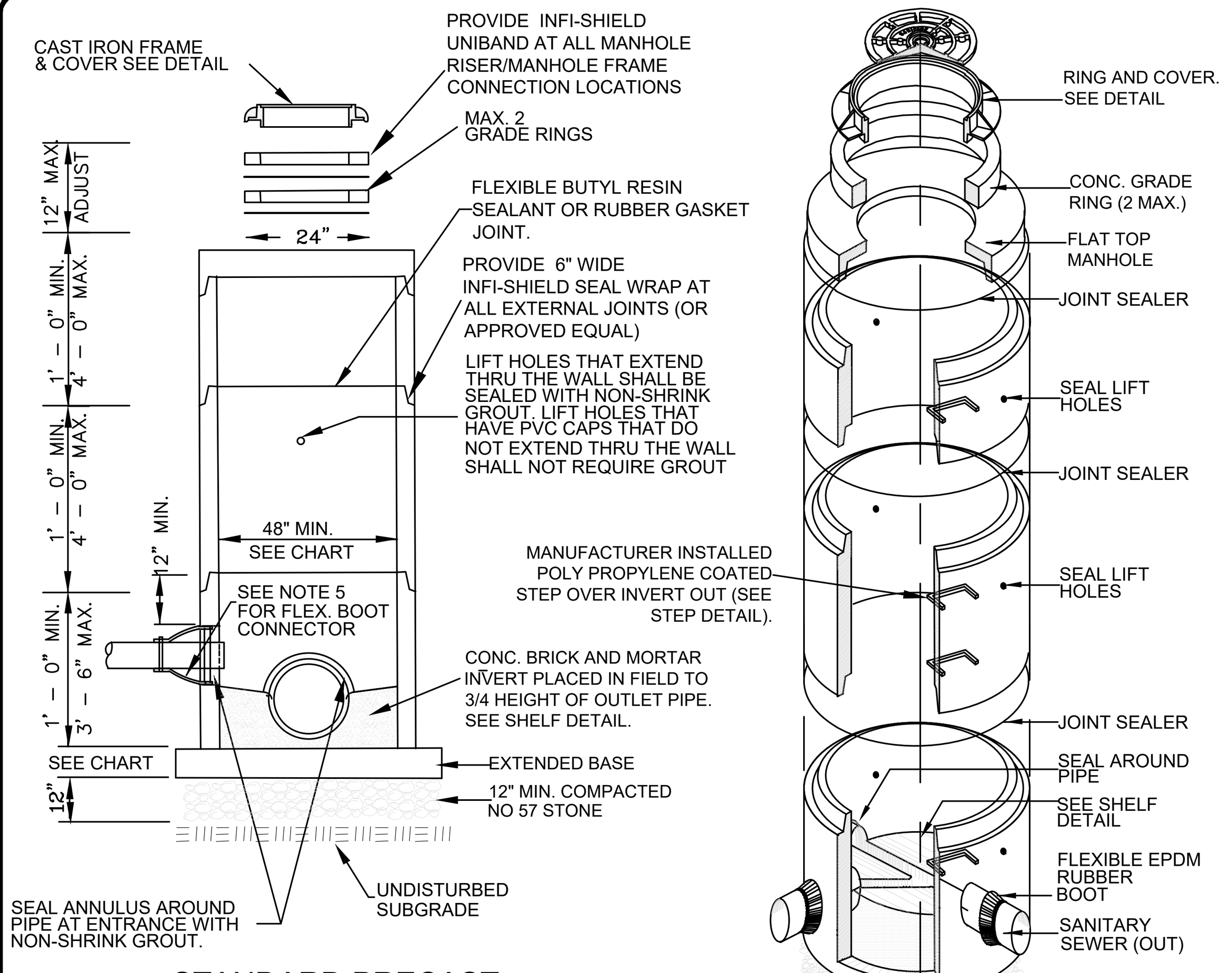
REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

CAD FILE: 468000B1
PROJECT NO: 4680



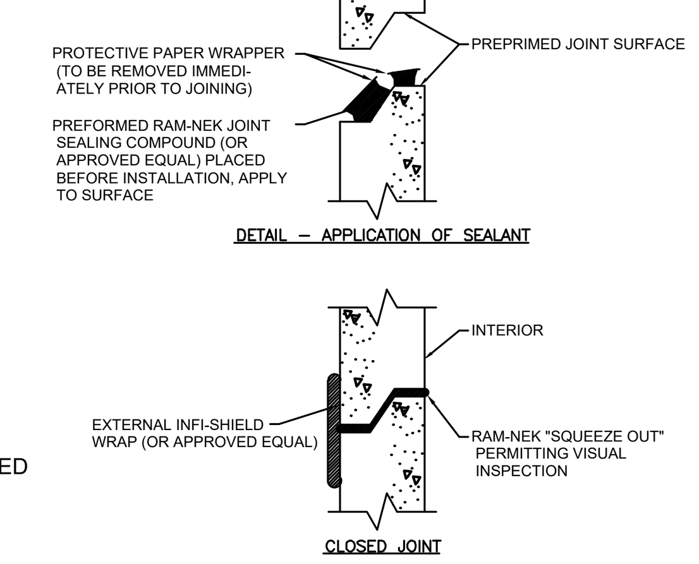
A FILLETED INVERT FOR A SMOOTH TRANSITION OF FLOW BETWEEN INLET & OUTLET PIPE SHALL BE PROVIDED.

STANDARD PRECAST CONCRETE MANHOLE

NOT TO SCALE (ALL MH SHALL HAVE EX. BASES)

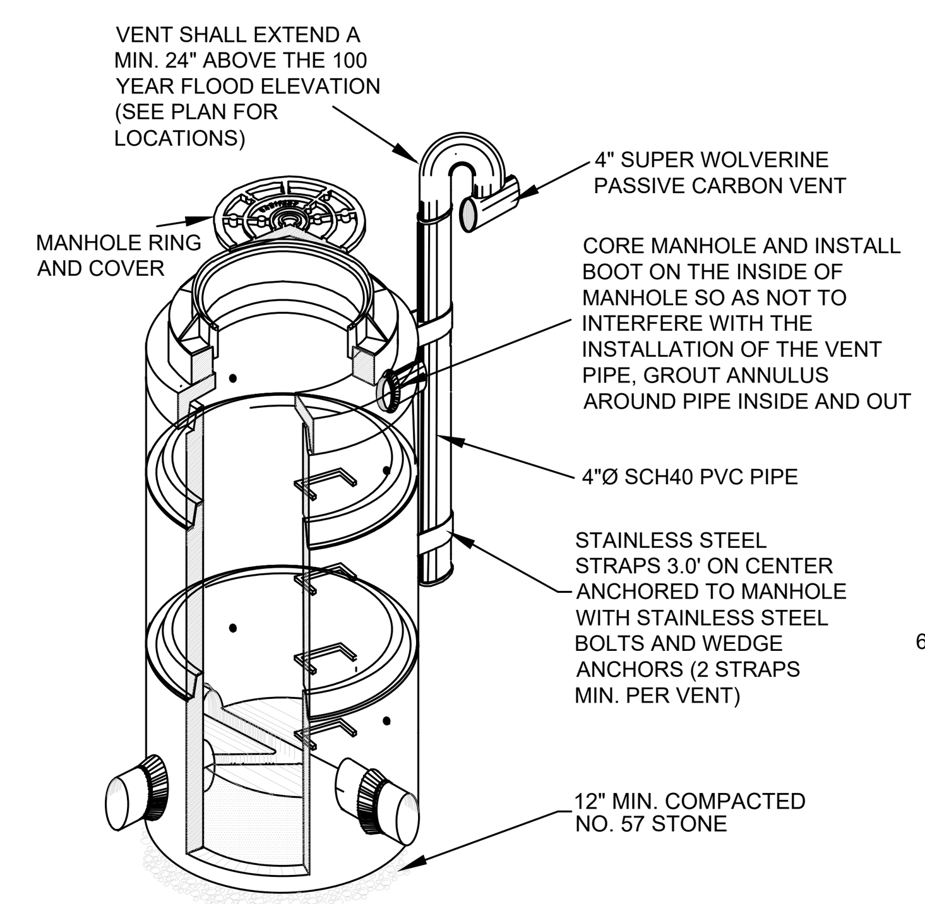
NOTES:

1. PRECAST REINFORCED CONCRETE MANHOLES SHALL BE IN ACCORDANCE WITH ASTM C-478
2. MIN. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI.
3. ALL MANHOLES SHALL HAVE MIN. 6" EXTENDED BASE.
4. FLEXIBLE BUTYL RESIN JOINT SEALANT SHALL BE IN ACCORDANCE W/ ASTM C990. RUBBER GASKET JOINTS SHALL BE IN ACCORDANCE W/ASTM C-443.
5. FLEXIBLE EPDM RUBBER BOOT CONNECTORS SHALL BE IN ACCORDANCE W/ ASTM C923, INSTALLED BY MANUFACTURER W/STAIN- LESS STEEL COMPRESSION RING AND TAKE-UP CLAMP. CONNECTION TO MAIN SHALL BE BY CONTRACTOR WITH STAINLESS STEEL PIPE CLAMP.
6. MORTAR SHALL BE QUICK SETTING, NON-SHRINK GROUT MIXED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. MANHOLE STEPS SHALL BE IN ACCORDANCE WITH ASTM C478 AND OSHA REGULATIONS ALIGN W/INVERT OUT.
8. PREFORMED MANHOLE INVERTS ARE NOT ACCEPTABLE UNLESS SPECIFICALLY APPROVED BY THE PROJECT ENGINEER. STANDING WATER IN INVERT OF MANHOLE IS NOT ACCEPTABLE.
9. ALL MANHOLES SHALL BE TESTED IN ACCORDANCE WITH ASTM C1244 "STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY THE NEGATIVE AIR PRESSURE (VACUUM) TEST PRIOR TO BACKFILL.



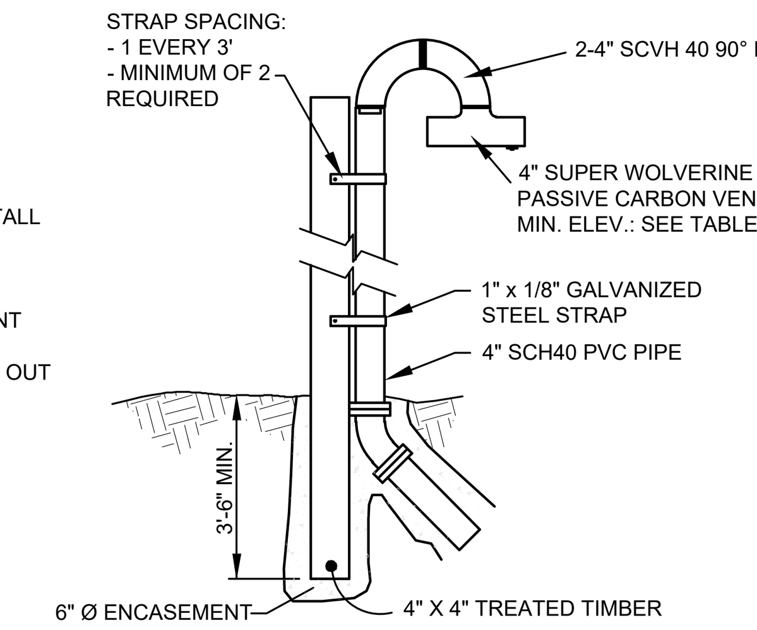
JOINT SEAL DETAIL

NOT TO SCALE



STANDARD PRECAST CONCRETE MANHOLE WITH VENT PIPING

NOT TO SCALE

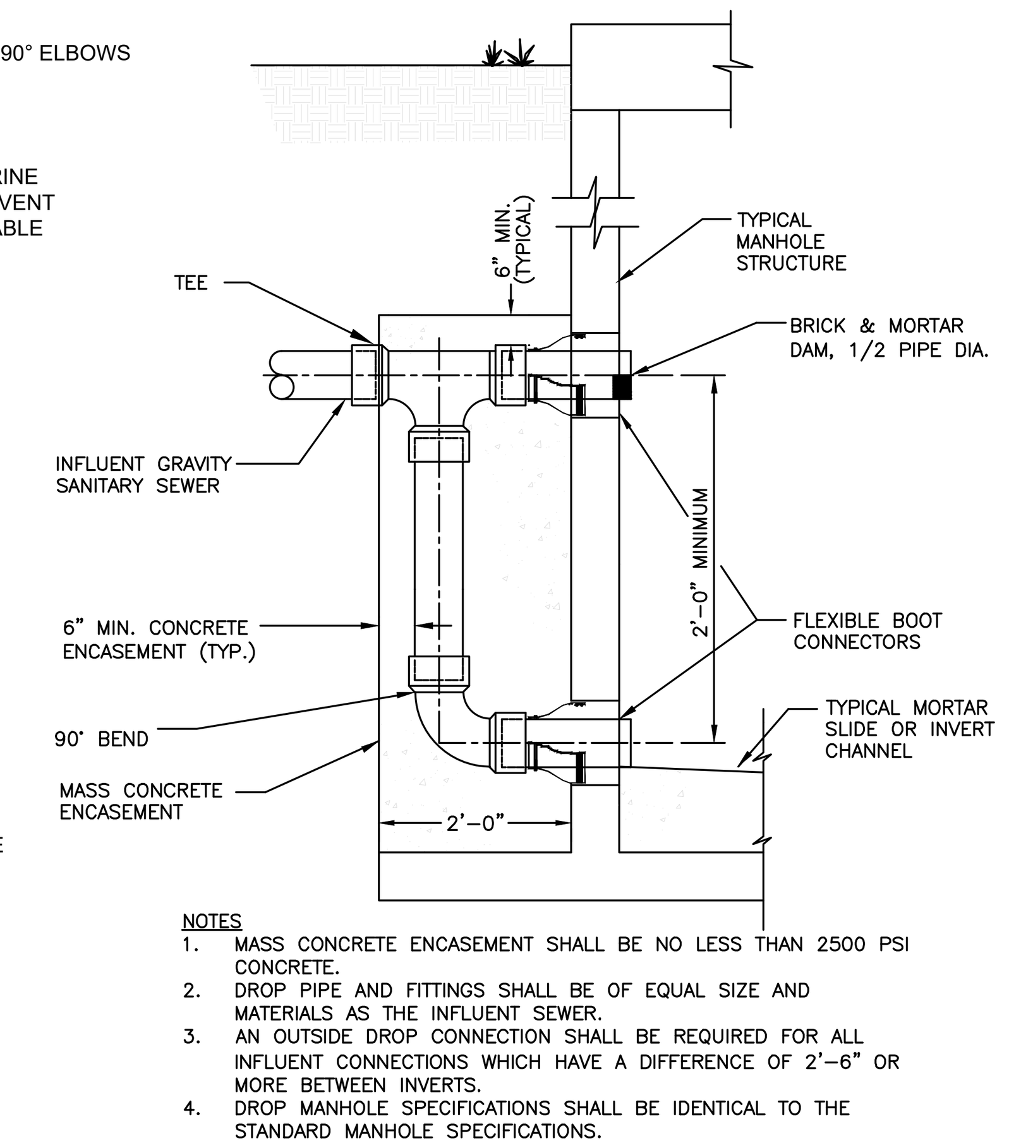


VENT PIPING DETAIL

NOT TO SCALE

NOTES:

1. VENT PIPE OPENING IN PRECAST CONCRETE MANHOLE WALL SHALL BE CAST OR CORED WITH A CONCRETE CORING MACHINE.
2. LOCATION OF VENT PIPE SHALL BE AS DIRECTED BY THE CONSTRUCTION INSPECTOR WITH WATERTIGHT RING AND COVER VENT TOP TO BE ELEVATED AT LEAST 12" ABOVE THE 100 YEAR FLOOD ELEVATION.
3. PASSIVE CARBON VENT FILTERS SHALL ONLY BE INSTALLED ON LIFT STATIONS AND MANHOLES WITH VENT PIPING. (SEE VENTED MANHOLE SCHEDULE)

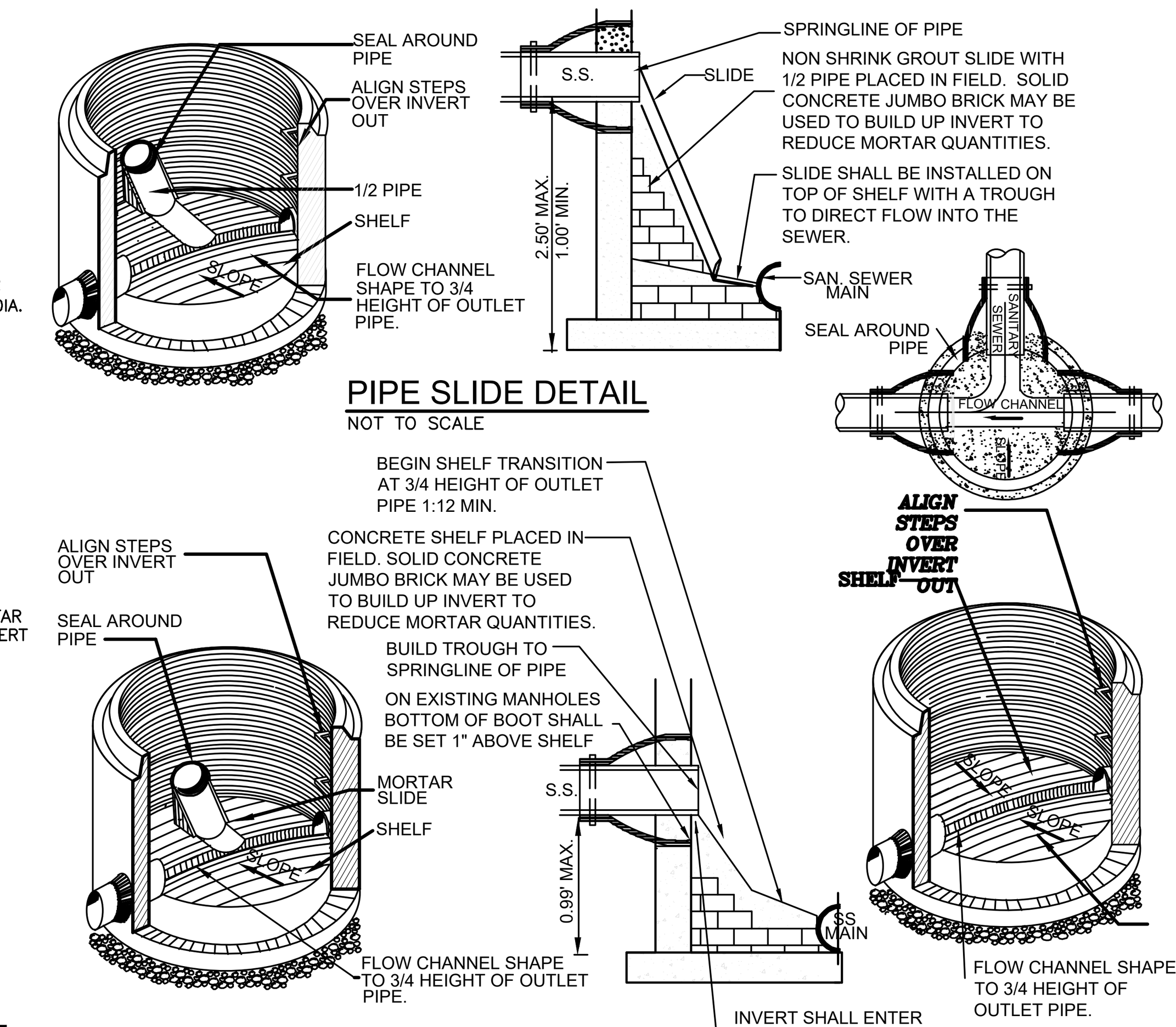


NOTES

1. MASS CONCRETE ENCASEMENT SHALL BE NO LESS THAN 2500 PSI CONCRETE.
2. DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIALS AS THE INFLUENT SEWER.
3. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT CONNECTIONS WHICH HAVE A DIFFERENCE OF 2'-6" OR MORE BETWEEN INVERTS.
4. DROP MANHOLE SPECIFICATIONS SHALL BE IDENTICAL TO THE STANDARD MANHOLE SPECIFICATIONS.

TYPICAL OUTSIDE DROP MANHOLE DETAIL

NOT TO SCALE



MORTAR SLIDE DETAIL

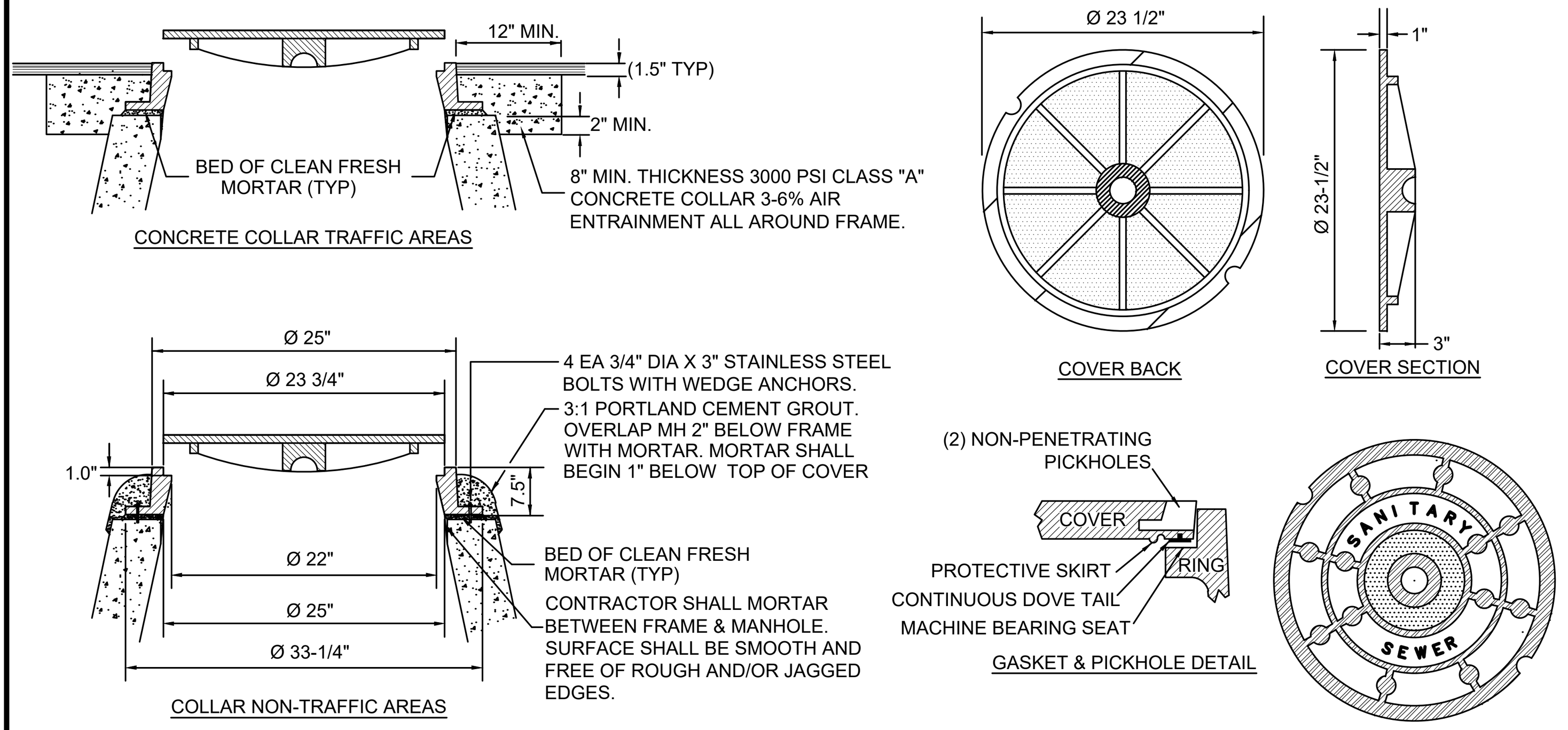
NOT TO SCALE

SHELF DETAIL

NOT TO SCALE

MORTAR AND PIPE SLIDE NOTES:

1. MORTAR SLIDE SHALL BE USED FOR LESS THAN 1 FOOT SEPARATION BETWEEN INVERT OUT & INVERT OF INCOMING PIPE.
2. PIPE SLIDE REQ'D WHERE VERTICAL SEPARATION BETWEEN PIPE INVERTS IS GREATER THAN 1 ' AND LESS THAN OR EQUAL TO 2.5'.
3. OUTSIDE DROP STRUCTURE REQUIRED WHERE VERTICAL SEPARATION BETWEEN INVERTS EXCEEDS 2.50'. SEE OUTSIDE DROP MANHOLE DETAIL.
4. VERIFY SLIDE INSTALLATION WITH PROJECT COORDINATOR PRIOR TO CONSTRUCTION.
5. MANHOLE AND CONNECTIONS SHALL BE IN ACCORDANCE WITH STANDARD MANHOLE DETAIL.
6. BRICK USED FOR INVERT AND SHELF CONSTRUCTION SHALL BE NCDOT STANDARD CONCRETE JUMBO BRICK. MEETING ASTM C55 GRADE S-II EXCEPT ABSORPTION LESS THAN 10 LBS/CU.FT.
7. MANHOLES GREATER THAN 12' IN DEPTH SHALL HAVE MIN. 6" EXTENDED BASE.
8. THE MINIMUM SLOPE ACROSS THE INVERT OF THE MANHOLE SHALL BE 2% UNLESS OTHERWISE APPROVED BY ENGINEER
9. SEE STANDARD MANHOLE DETAIL FOR ADDITIONAL REQUIREMENTS.
10. DROP AND / OR SLIDE REQUIREMENTS SHALL APPLY TO ALL LATERALS ENTERING MANHOLES AS OUTLINED IN NOTES 1,2&3. NO MORE THAN 4, FOUR INCH LATERALS OR 3, SIX INCH LATERALS SHALL ENTER A 4' DIAMETER TERMINAL MANHOLE. NO MORE THAN 2 LATERALS (REGARDLESS OF SIZE) SHALL ENTER ALL OTHER 4' DIAMETER MANHOLES. ALL LATERALS SHALL HAVE AN INDIVIDUAL TROUGH. 5' DIAMETER MANHOLES SHALL BE USED IF THE ABOVE CONDITIONS ARE NOT MET. THE INVERT OF THE LATERAL SHALL B A MINIMUM OF 1" ABOVE THE SHELF.

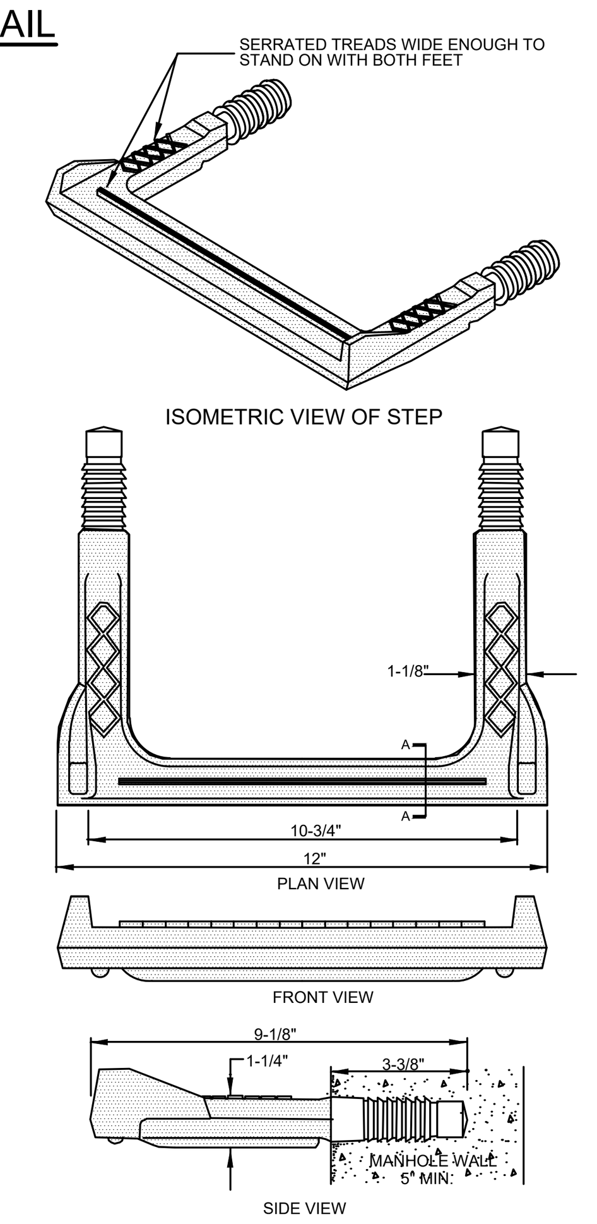


STANDARD MANHOLE RING AND COVER

NOT TO SCALE (TO BE USED ON ALL MANHOLES)

NOTES:

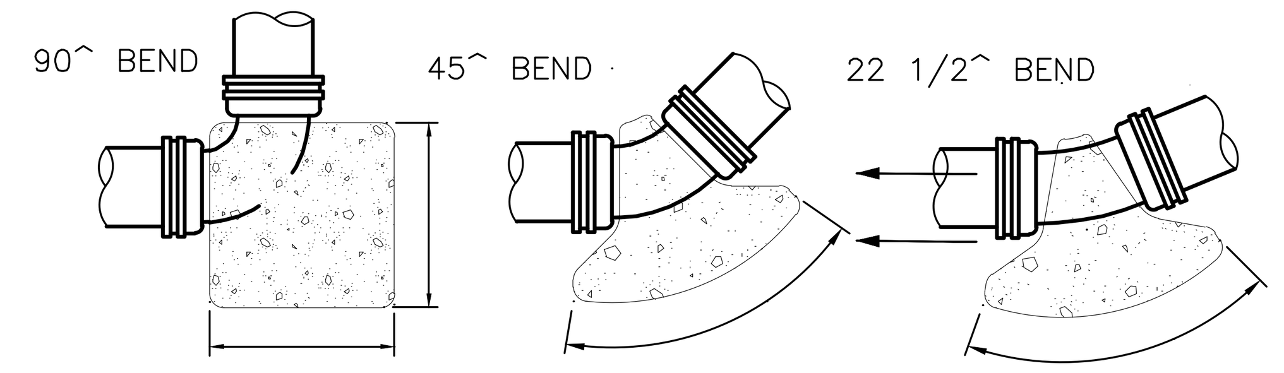
1. MANHOLE FRAME AND COVER SHALL BE MADE OF GRAY CAST IRON CONFORMING TO ASTM-A48 CLASS 35B, MANUFACTURED BY SAME MANUFACTURER. ALL CASTINGS SHALL CONFORM TO THE SHAPE AND DIMENSIONS SHOWN. THEY SHALL BE CLEAN AND PERFECT, WITHOUT BLOW OR SAND HOLES OR DEFECTS OF ANY KIND, TENDING TO IMPAIR THEIR STRENGTH. NO PLUGGING OR STOPPING OF DEFECTIVE HOLES WILL BE PERMITTED.
2. CASTINGS SHALL BE UNPAINTED AND SHALL HAVE THE LETTERS "SANITARY SEWER" CAST INTO COVER. LETTERS SHALL BE RAISED AND CLEARLY VISIBLE.
3. MANHOLE RING AND COVER SHALL WITHSTAND H-20 VEHICULAR TRAFFIC LOADING CONDITIONS.
4. MINIMUM AVERAGE WEIGHT: PLUS OR MINUS 5% RING 190 LBS., COVER 125 LBS, UNIT 315 LBS.
5. COVERS SHALL HAVE (2) NON-PENETRATING PICKHOLES.
6. A T-GASKET SHALL BE PROVIDED BETWEEN COVER AND RING SEAT.
7. RING AND COVER SHALL BE US FOUNDRY & MFG. CORP RING MODEL 669 & COVER MODEL KL, TGS (ALTERNATES SHALL BE APPROVED BEFORE INSTALLATION)



MANHOLE STEP DETAIL

NOTES: NOT TO SCALE

1. COPOLYMER POLYPROPYLENE PLASTIC STEP SHALL BE PLACED 16" O.C. IN ALL STRUCTURES 5' DEPTH OR GREATER.
2. STEPS SHALL BE INSTALLED BY MANUFACTURER AND SHALL BE ALIGNED OVER STRUCTURE INVERT OUT.
3. DIMENSIONS SHOWN ARE TO CONVEY THE DESIRED SIZE OF THE STEP. STEPS OF SIMILAR SIZE AND CONSTRUCTION MAY BE ACCEPTABLE PROVIDED MATERIAL SUBMITTAL IS APPROVED BY ENGINEER.
4. MATERIALS OF CONSTRUCTION AND METHOD OF INSTALLATION SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND ASTM C-478.



90° BEND

PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-0" x 1'-0"
4"	1'-0" x 1'-0"
6"	1'-3" x 1'-3"
8"	2'-0" x 2'-0"
10"	2'-6" x 2'-6"
12"	3'-0" x 3'-0"

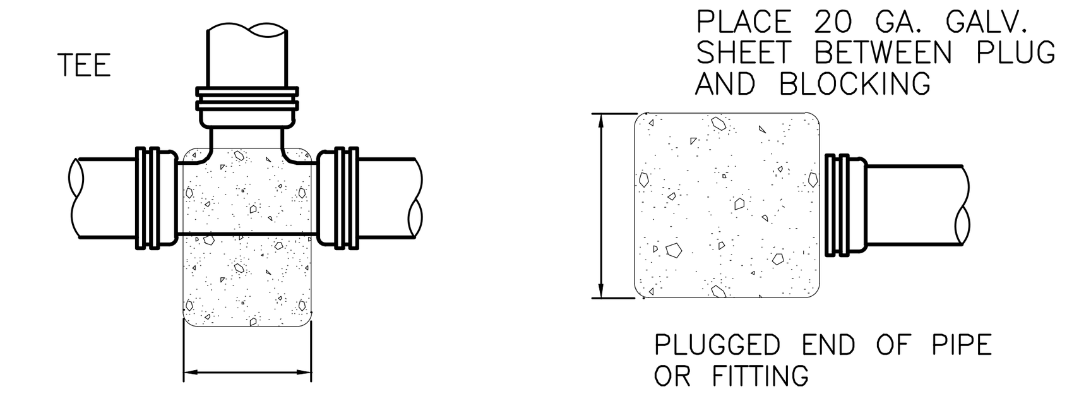
45° BEND

PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-0" x 1'-0"
4"	1'-0" x 1'-0"
6"	1'-3" x 1'-3"
8"	1'-6" x 1'-6"
10"	2'-0" x 2'-0"
12"	2'-3" x 2'-3"

22 1/2° BEND

PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-0" x 1'-0"
4"	1'-0" x 1'-0"
6"	1'-0" x 1'-0"
8"	1'-2" x 1'-2"
10"	1'-6" x 1'-6"
12"	1'-8" x 1'-8"

NOTE:
PIPING LESS THAN 2" IN DIAMETER SHALL HAVE THE SAME REQUIREMENTS AS 2" DIAMETER PIPE



TEE

PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-0" x 1'-0"
4"	1'-2" x 1'-2"
6"	1'-6" x 1'-6"
8"	1'-9" x 1'-9"
10"	2'-2" x 2'-2"
12"	2'-8" x 2'-8"

PLUGGED END OF PIPE OR FITTING

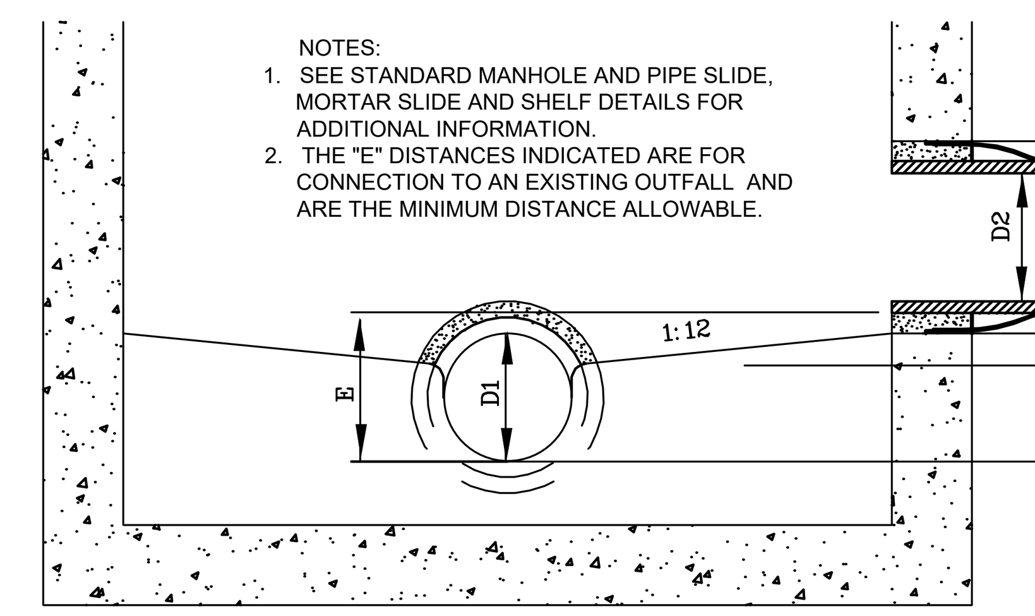
PIPE	AREA AGAINST UNDISTURBED SOIL
2"	1'-0" x 1'-0"
4"	1'-2" x 1'-2"
6"	1'-6" x 1'-6"
8"	1'-9" x 1'-9"
10"	2'-2" x 2'-2"
12"	2'-8" x 2'-8"

CONCRETE THRUST BLOCKING DETAILS

NOTE: NOT TO SCALE
CONCRETE THRUST BLOCKING SHALL ONLY BE USED WHERE MECHANICAL RESTRAINTS ARE NOT FEASIBLE. PRIOR APPROVAL MUST BE OBTAINED FROM ENGINEER PRIOR TO USING THRUST BLOCKING

NOTES:

1. SEE STANDARD MANHOLE AND PIPE SLIDE, MORTAR SLIDE AND SHELF DETAILS FOR ADDITIONAL INFORMATION.
2. THE "E" DISTANCES INDICATED ARE FOR CONNECTION TO AN EXISTING OUTFALL AND ARE THE MINIMUM DISTANCE ALLOWABLE.



TO FIND "E" ENTER CHART AT LEFT WITH EFFLUENT PIPE SIZE AND ENTER PIPE AT TOP WITH INFLUENT PIPE SIZE. "E" DISTANCE IS POINT OF CONVERGENCE OF COLUMN AND ROW.

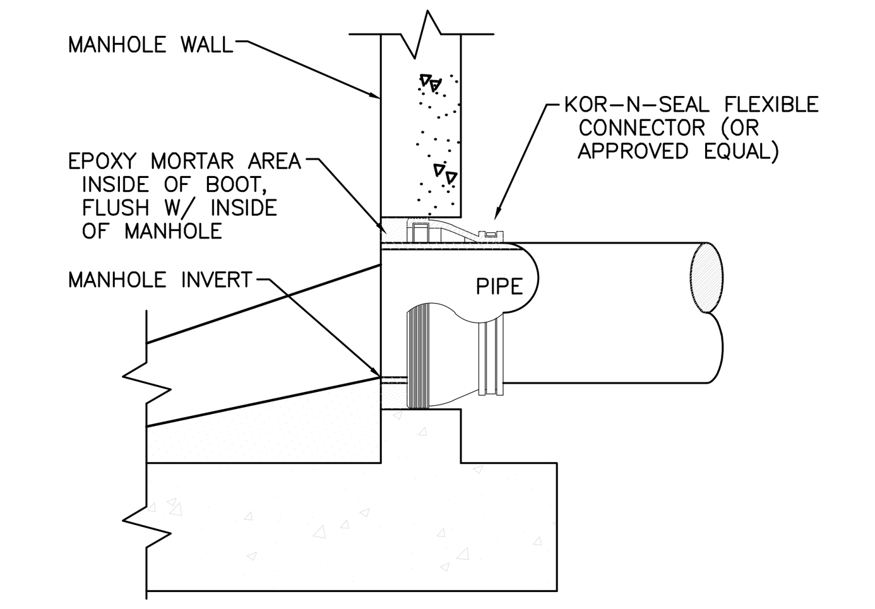
D1 \ D2	4"	6"	8"	12"	15"		18"
8	9.00	9.50	10.00	–	–	–	–
12	11.00	11.50	12.00	13.00	–	–	–
15	14.25	14.75	15.25	16.25	17.00	–	–
18	16.50	17.00	17.50	18.50	19.25	20.00	–
24	21.00	21.50	22.00	23.00	23.75	24.50"	26.00

24"

WHERE 5' MH IS REQUIRED ADD 1/2" TO "E" DISTANCE TO ACCOUNT FOR THE ADDITIONAL 6" OF SHELF SLOPE.

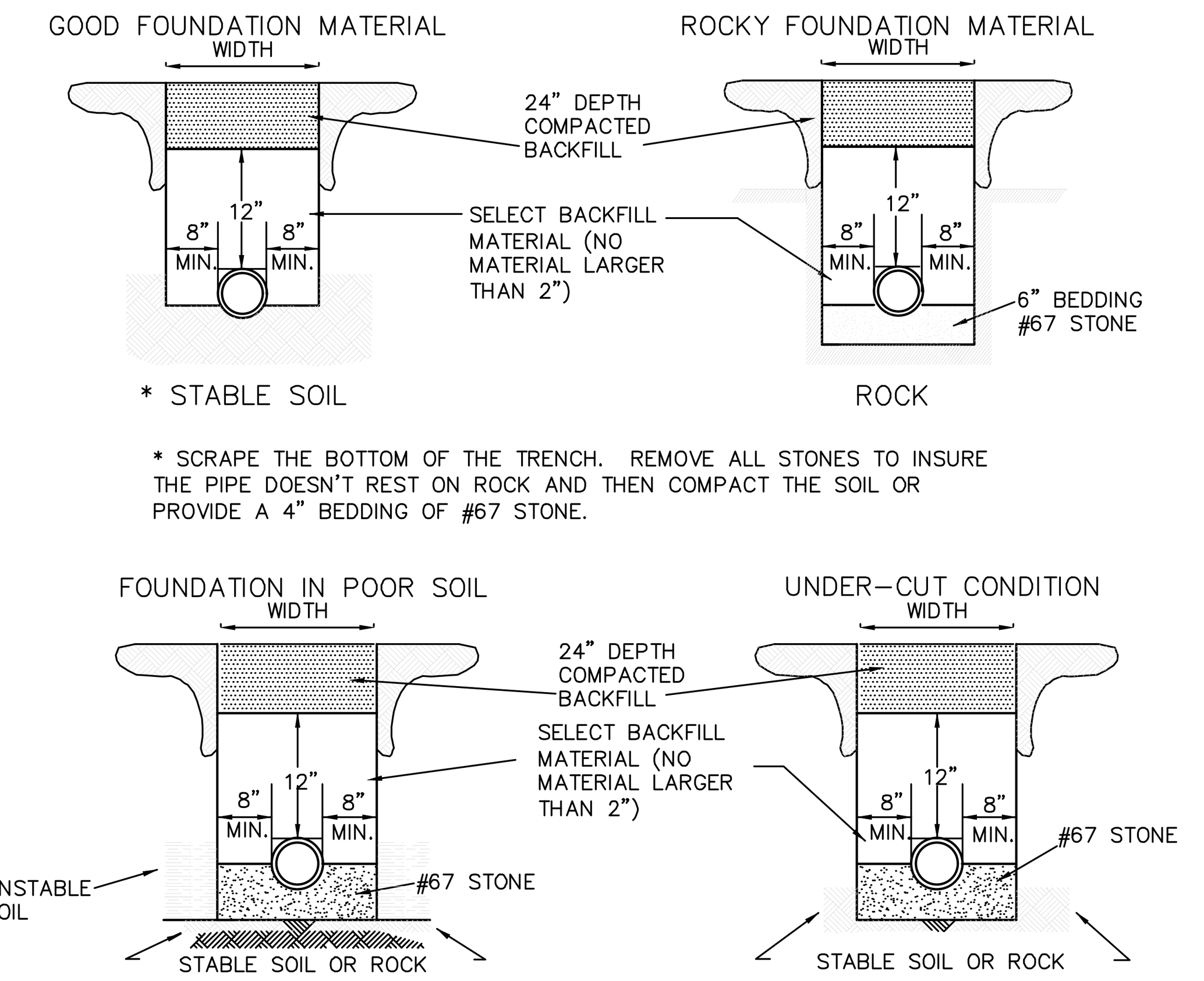
MANHOLE CONNECTION GUIDE

NOT TO SCALE



FLEXIBLE MANHOLE CONNECTION DETAIL

NOT TO SCALE



NOTE :

1. NO ROCKS SHALL BE ALLOWED WITHIN 24" OF THE WATER LINES.
2. NO ROCKS LARGER THAN 6" IN ANY DIMENSION SHALL BE ALLOWED ABOVE THE INITIAL BACKFILL.
3. THE INITIAL BACKFILL SHALL BE PLACED AND COMPACTED IN 6" LIFTS.
4. NO ORGANIC OR FROZEN MATERIAL OR DEBRIS SHALL BE ALLOWED IN THE TRENCH.
5. BELL HOLES SHALL BE DUG OUT IN ALL CASES.

TYPICAL SEWER PIPE INSTALLATION & BEDDING

NOT TO SCALE

TRENCH EXCAVATION LIMITS		
INTERNAL DIAMETER OF PIPE	W WIDTH OF TRENCH MAX.	MIN.
4"-6"	NO LIMIT	2'-0"
8"-10"	NO LIMIT	2'-2"
12"	3'-9"	O.D.+2'
14"-16"	4'-2"	O.D.+2'
18"	4'-4"	O.D.+2'
20"	4'-8"	O.D.+2'
24"	4'-11"	O.D.+2'
30"	5'-6"	O.D.+2'
36"	6'-0"	O.D.+2'

W=TRENCH WIDTH AT TOP OF PIPE
S=PAVEMENT REPLACEMENT WIDTH (S = W + 3'-0")

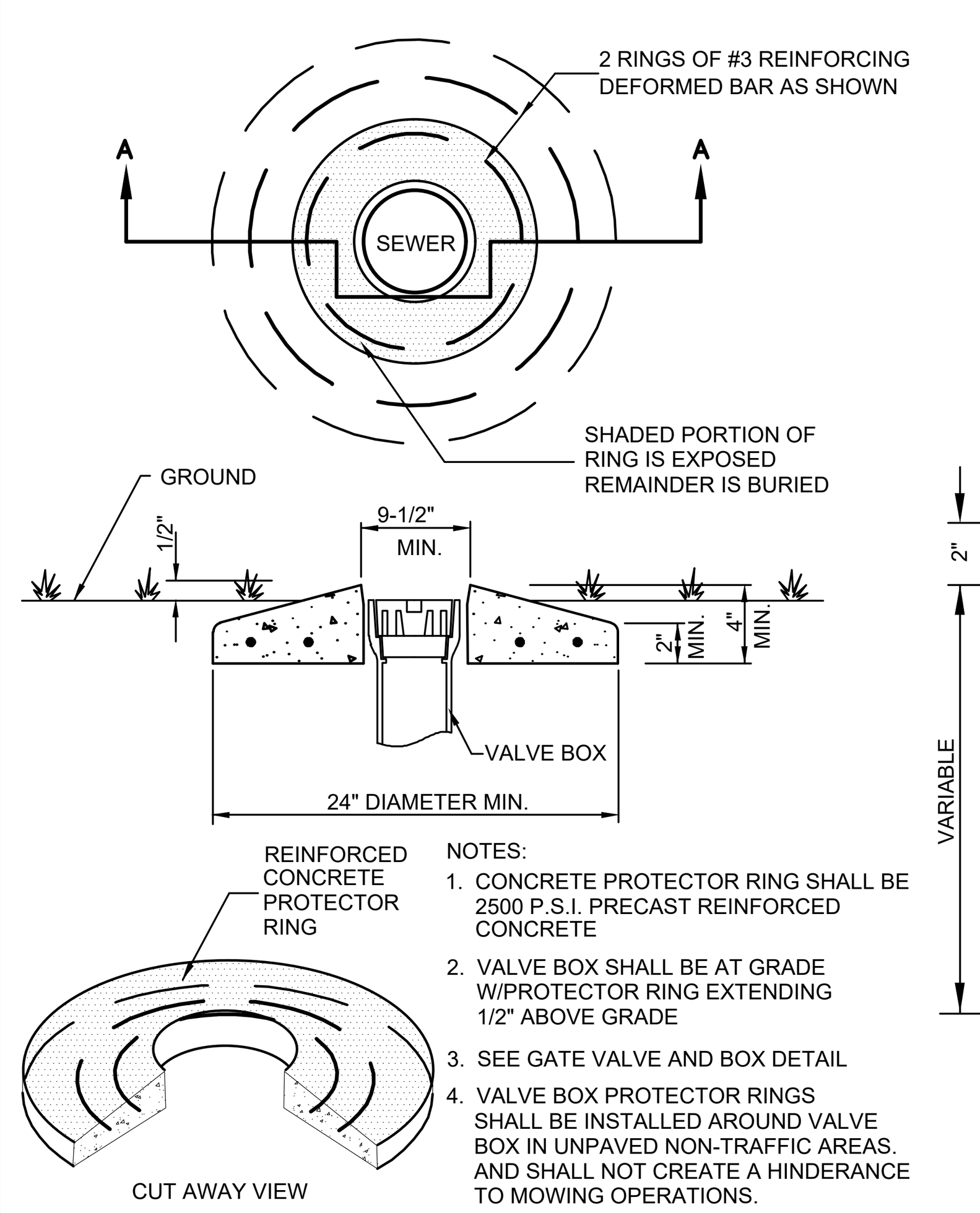
MAIN OR LATERAL MIN SLOPE
4" @2.00% MIN.
6" @ 0.67% MIN./MAIN
6" @ 2.00% MIN./LATERAL
8" @ 0.40% MIN.
12" @ 0.22% MIN.
15" @ 0.15% MIN.
18" @ 0.12% MIN.

GRAVITY SANITARY SEWER PIPE SCHEDULE

PIPE MATERIAL	PIPE SIZE INCHES	BEDDING TYPE FOR DEPTH OF COVER SHOWN: TYPE "B"	TYPE "C"
PVC	8"	0 - 24"	N/A
PVC	15"	0 - 24"	N/A
DIP	8"	N/A	ALL DEPTHS
DIP	16"	N/A	ALL DEPTHS

NOTES:
(1) ALL SEWER SERVICE PIPE SHALL HAVE TYPE "A" BEDDING
(2) CHANGES IN PIPE BEDDING CLASSIFICATION SHALL ONLY BE MADE AT MANHOLES.
(3) DUCTILE IRON FORCE MAIN SHALL HAVE TYPE "A" BEDDING.

1. EMBEDMENT MATERIALS, CLASSES I, II, OR III AS DESCRIBED IN ASTM D 2321, SHALL BE USED FOR BEDDING FOR BEDDING, HAUNCHING AND INITIAL BACKFILL AND CAREFULLY COMPACTED FOR ALL FLEXIBLE PIPE.
2. BEDDING CLASSES A, B, C OR CRUSHED STONE AS DESCRIBED IN ASTM C 12 SHALL BE USED AND CAREFULLY COMPACTED FOR ALL RIGID PIPE.
3. ALL EXCAVATIONS SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE CONSTRUCTION STANDARDS FOR EXCAVATIONS IN OSHA "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION", CHAPTER XV11 OF TITLE 29, CFR, PART 1926. THE CONTRACTOR SHALL HAVE A COMPETENT PERSON ON THE JOB AT ALL TIMES AND SHALL EMPLOY A PROFESSIONAL ENGINEER TO ACT UPON ALL PERTINENT MATTERS OF THE WORK.

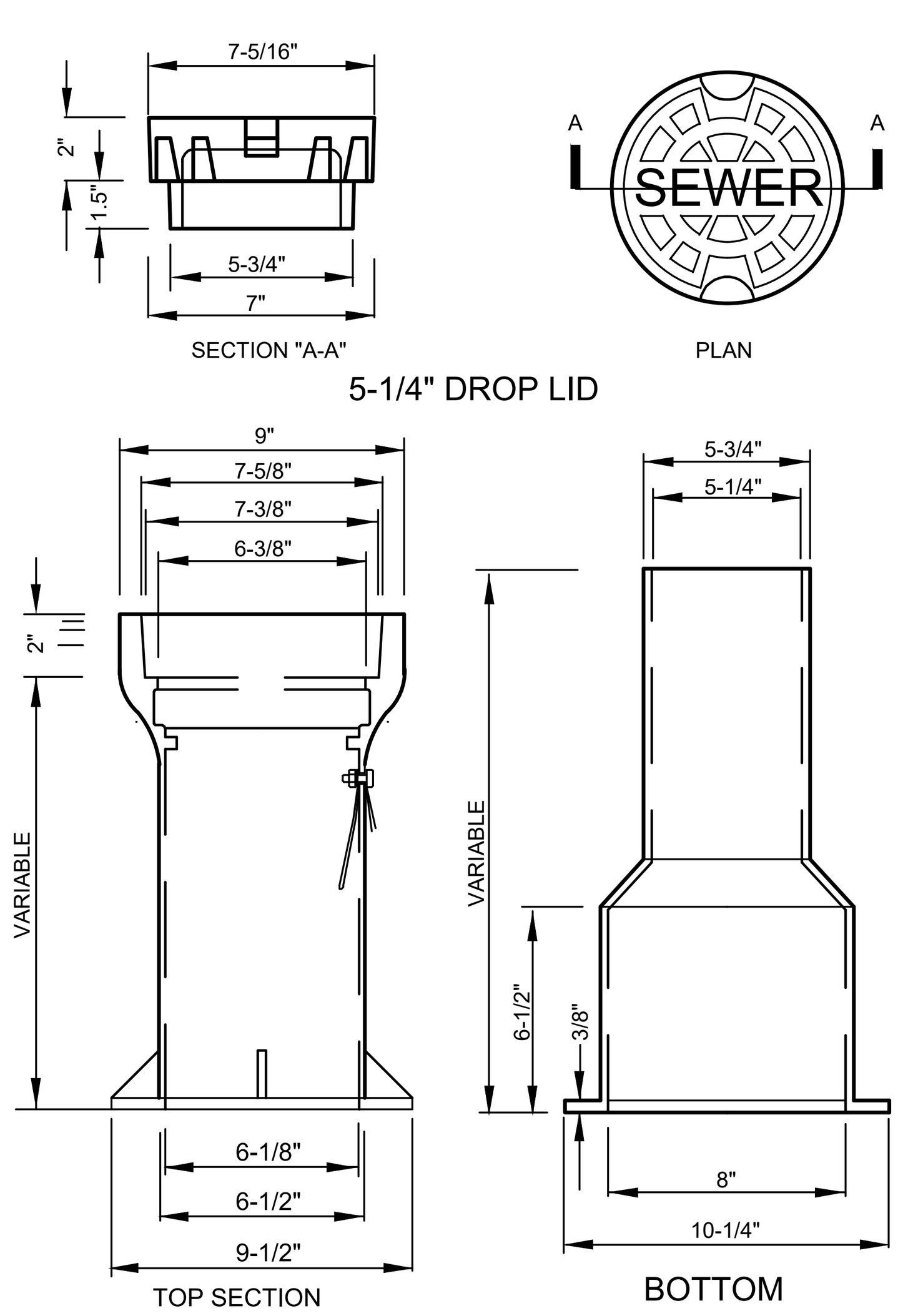


NOTES:

1. CONCRETE PROTECTOR RING SHALL BE 2500 P.S.I. PRECAST REINFORCED CONCRETE
2. VALVE BOX SHALL BE AT GRADE W/PROTECTOR RING EXTENDING 1/2" ABOVE GRADE
3. SEE GATE VALVE AND BOX DETAIL
4. VALVE BOX PROTECTOR RINGS SHALL BE INSTALLED AROUND VALVE BOX IN UNPAVED NON-TRAFFIC AREAS. AND SHALL NOT CREATE A HINDERANCE TO MOWING OPERATIONS.

VALVE BOX PROTECTOR RING DETAIL

SCALE: NONE

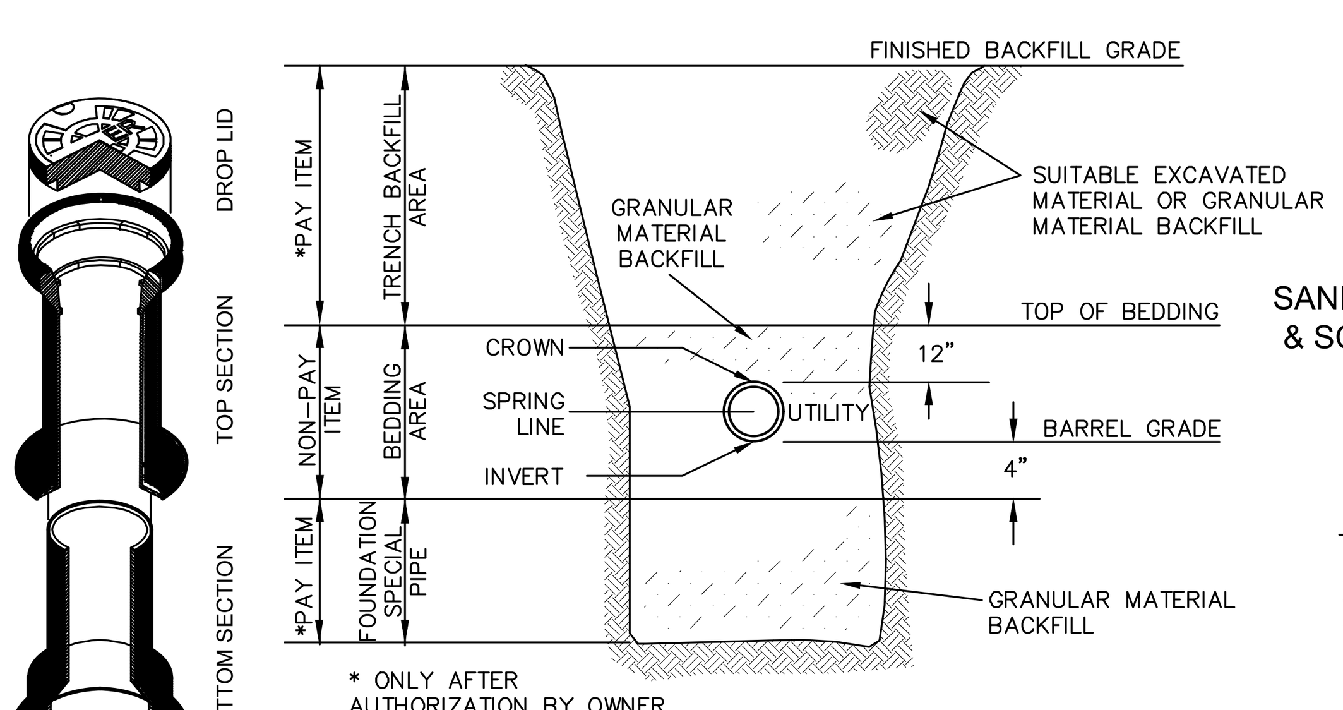


VALVE BOX DETAIL

SCALE: NONE

VALVE BOX NOTES:

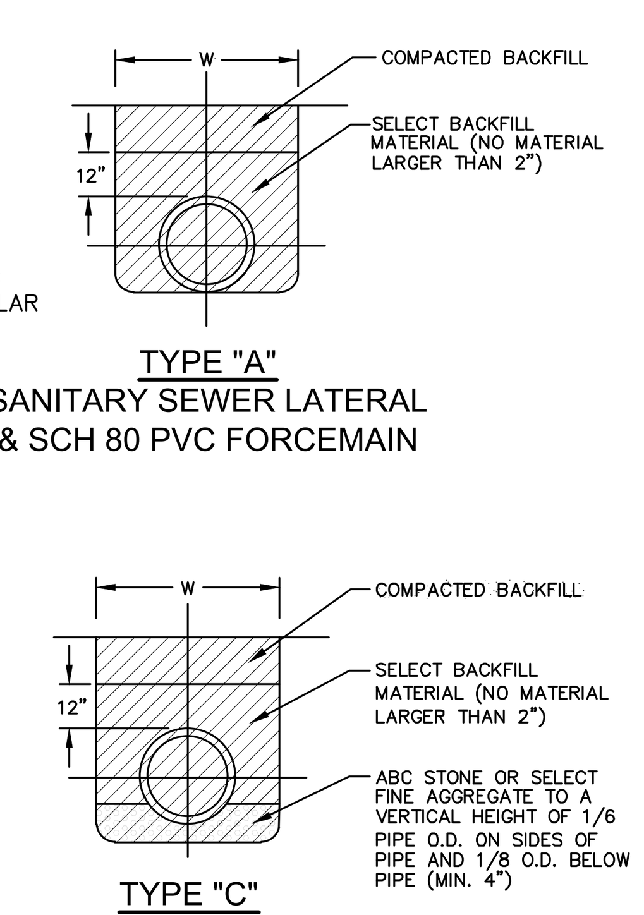
1. VALVE BOX SHALL BE 3 PART SLIP-TYPE MANUFACTURED BY ALABAMA PIPE CO., CHAPMAN VALVE CO., COLOMBIAN IRON WORKS, R.D. WOOD CO. OR APPROVED EQUAL.
2. VALVE BOX SHALL BE 3-PIECE CLOSE GRAINED CAST IRON SLIP-TYPE VALVE BOX WITH A MINIMUM THICKNESS OF 3/16".
3. VALVE BOX SHALL HAVE RAISED LETTERS "SEWER" CAST INTO COVER.
4. VALVE BOX ACCOMMODATES 4" THRU 12" VALVES.
5. VALVE BOX SHALL HAVE 3/8" HOLE DRILLED IN TOP SECTION THRU WHICH A 1/4" X 1-1/2" GALVANIZED BOLT SHALL BE USED TO SECURE A 12GA. THHN TRACER WIRE FOR NON-FERROUS PIPE. A 1/2" WASHER SHALL BE USED BETWEEN NUT AND INSIDE OF BOX. TIGHTEN HAND TIGHT.
6. SCREW TYPE VALVE BOXES ARE NOT ACCEPTABLE.
7. DIMENSIONS SHOWN ARE FOR INFORMATION ONLY AND VARY BASED UPON THE MANUFACTURER.



* ONLY AFTER AUTHORIZATION BY OWNER

FORCE MAIN & GRAVITY SEWER SERVICE TRENCH DETAIL

NOT TO SCALE



TYPE "A"
SANITARY SEWER LATERAL & SCH 80 PVC FORCEMAIN

TYPE "C"
D.I.P. FORCEMAIN

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION CONSTRUCTION DETAILS

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB
SHEET: 47 OF 49	
CAD FILE: 468000B1	
PROJECT NO: 4680	

S:\projects\4680 Flora Trust (Fast Jr)\dwg\Construction Drawings\468000B1.dwg 9/26/2024 Plotted 9/26/2024 10:56 AM DWFB ePlot.pc3

ORDER OF PRECENDENCE GENERAL NOTES/TECHNICAL SPECIFICATIONS

1. THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION OR REQUIREMENT OUTLINED IN THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS. IF CONFLICTS OCCUR BETWEEN THE TECHNICAL SPECIFICATIONS AND THE NOTES CONTAINED HEREIN, THE TECHNICAL SPECIFICATIONS SHALL SUPERSEDE.

2. CONTRACTOR IS CHARGED WITH PERFORMING SITE INVESTIGATIONS TO ASCERTAIN EXISTING SITE CONDITIONS. PHOTOGRAPHIC DOCUMENTATION OF PRE-EXISTING CONSTRUCTION CONDITIONS WILL BE CONDUCTED BY THE ENGINEER FOR DETERMINATION OF COMPLIANCE WITH CONDITIONS NOTED HEREON.

GENERAL NOTES

1. ACCESS TO SITES SHALL BE BY PUBLIC RIGHT-OF-WAYS AND UTILITY EASEMENTS. OTHER ACCESS LOCATIONS REQUIRED SHALL BE SECURED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. SUPPLEMENTAL EROSION CONTROL MEASURES SHALL BE REQUIRED TO INCLUDE CONSTRUCTION ENTRANCES, SILT FENCING, RESTORATION, ETC. ADDITIONAL MEASURES SHALL BE INCLUDED AS PART OF A SUPPLEMENTAL EROSION CONTROL PLAN PREPARED BY THE CONTRACTOR.

2. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE CONSTRUCTION STAGING AREA AT HIS EXPENSE.

3. THE CONTRACTOR IS EXPECTED AND REQUIRED TO COOPERATE WITH THE PROPERTY OWNERS AFFECTED BY THE WORK. MAIL ADJOINING PROPERTY OWNER LETTERS TO EFFECTED PROPERTY OWNERS NOTIFYING THEM THAT WORK WILL BE OCCURRING WITHIN THE AREAS ADJOINING THEIR PROPERTIES. THIS LETTER SHALL GIVE PROPERTY OWNERS A MINIMUM OF 14 DAYS WRITTEN NOTICE PRIOR TO COMMENCEMENT OF CONSTRUCTION FOR REMOVAL OF ANY PERSONAL ITEMS FROM THE RIGHT- OF-WAY. THE LETTER OUTLINES THE EXTENT OF THE WORK TO BE PERFORMED TO INCLUDE DRIVEWAY DISRUPTIONS.

4. CONTRACTOR SHALL MAINTAIN A NEAT AND CLEAN JOB-SITE TO INCLUDE STAGING/STORAGE AREAS AS FOLLOWS:
   - PERFORM DUST CONTROL BY WATERING DAILY OR AS DIRECTED BY THE ENGINEER AND/OR CURRITUCK COUNTY.
   - SWEEP STREETS A MINIMUM OF ONCE WEEKLY (FRIDAY) OR AS DIRECTED BY THE ENGINEER AND/OR CURRITUCK COUNTY.
   - BLADE, LEVEL AND RE-COMPACT ALL EXPOSED TRENCHES WEEKLY (OR AS DIRECTED BY THE ENGINEER) TO PRODUCE A SMOOTH "RIDE".
   - PERFORM DAILY CLEAN-UP OF ALL DIRT, DEBRIS AND SCRAP MATERIALS.
   - REMOVE EXCESS EQUIPMENT, MATERIALS, TOOLS, ETC. NOT NEEDED.
   - ANY DRIVEWAY REMOVALS MUST HAVE A TEMPORARY SURFACE INSTALLED WITHIN THE SAME DAY AS REMOVAL. APPROVED SURFACES MAY CONSIST OF EITHER ABC OR MILLINGS.

   THE WORK WITHIN RIGHT OF WAY AREAS MUST BE KEPT IN AN ORDERLY AND NEAT FASHION. NO MATERIAL (SOILS, GRAVEL OR OTHER PROJECT FILL) CAN BE PLACED DIRECTLY ON ANY STREET SURFACE WITHOUT MATTING BEING PUT DOWN FIRST. ANY DAMAGE TO ANY ROAD SURFACE FROM CONSTRUCTION ACTIVITIES MUST BE REPAIRED AT OWNERS EXPENSE.

5. EXCESS SUITABLE SOIL EXCAVATED DURING CONSTRUCTION SHALL BE STOCKPILED FOR USE ON THE PROJECT OR DISPOSED OF OFF-SITE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOT BE ALLOWED TO STOCKPILE MATERIALS OR EXCESS MATERIALS IN THE STREET RIGHT-OF-WAYS AT ANY TIME. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT AND SUITABLE STOCKPILE AREA AND LOCATION AT THE CONTRACTOR'S EXPENSE.

6. CONTRACTOR SHALL PROVIDE MEASURES DURING CONSTRUCTION TO SECURE THE SITE AND EXCAVATION FROM THE GENERAL PUBLIC AND COMPLY WITH ALL OSHA REGULATIONS. JOB SITE SAFETY IS THE EXCLUSIVE AND SOLE RESPONSIBILITY OF THE CONTRACTOR. OPEN EXCAVATION LEFT UNATTENDED OR OVER NIGHT IS NOT ACCEPTABLE AND SHALL BE FILLED IMMEDIATELY.

7. CONTRACTOR SHALL REPAIR OR REPLACE DRIVES DISTURBED BY CONSTRUCTION TO EXISTING OR BETTER CONDITIONS. NO SEPARATE PAYMENT UNLESS OTHERWISE INDICATED.

8. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING WHERE FENCES ARE REMOVED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE FENCE REMOVAL OR REINSTALLATION WITH INDIVIDUAL PROPERTY OWNERS PRIOR TO REMOVAL. CONTRACTOR SHALL REINSTALL ALL SHEDS, FENCES, ETC. TO AS GOOD OR BETTER THAN EXISTING CONDITIONS UNLESS OTHERWISE INDICATED. (NO SEPARATE PAYMENT).

9. CONTRACTOR SHALL REPLACE ALL DISTURBED MAILBOXES, SIGNS, ETC. DISTURBED DURING CONSTRUCTION WITHIN 24 HOURS OF DISTURBANCE. PERMANENT ROAD SIGNAGE DISTURBED SHALL BE REPLACED IMMEDIATELY AND IF NECESSARY ROADWAY SIGNS SHALL BE TEMPORARILY INSTALLED IN A LOCATION CONSISTENT WITH THE NCMUTCD TO PROVIDE CONTINUOUS TRAFFIC AWARENESS OF ROADWAY CONDITIONS. (NO SEPARATE PAYMENT).

10. CONTRACTOR SHALL PROVIDE SECURITY FENCING, SECURITY GUARD, AND ANY AND ALL OTHER MEASURES CONTRACTOR DEEMS NECESSARY TO PROTECT EQUIPMENT AND MATERIALS STORED ON THE PROJECT. (NO SEPARATE PAYMENT).

11. WHERE CONTRACTOR CEASES WORK OPERATIONS FOR A 72 HOUR PERIOD OR LONGER, SUCH AS HOLIDAYS, ETC., THE FOLLOWING SHALL BE ACCOMPLISHED PRIOR TO THE WORK STOPPAGE.
    A. CONTRACTOR SHALL STORE ALL EQUIPMENT IN THE CONTRACTOR STAGING AREA OR OFF SITE.
    B. THE CONTRACTOR SHALL SWEEP ALL STREETS, PERFORM GENERAL CLEANUP AND SHALL PERFORM MAINTENANCE ON ALL EXPOSED PATCHES.

12. CONTRACTOR SHALL SCHEDULE WORK AND MATERIAL DELIVERIES SO THAT STORED MATERIAL QUANTITIES ON THE JOB SITE SHALL BE MINIMIZED.

13. CONTRACTOR SHALL STORE ALL MATERIALS IN THE CONTRACTOR STAGING AREA 72 HOURS PRIOR TO INCORPORATING INTO THE WORK TO REDUCE OBSTRUCTIONS TO TRAFFIC AND INCONVENIENCE TO RESIDENTS. WHERE UTILITIES ARE BEING CONSTRUCTED IN EASEMENTS OUT OF TRAFFIC AREAS CONTRACTOR MAY STORE MATERIALS AHEAD OF CONSTRUCTION FOR A DISTANCE NOT GREATER THAN 1800 FEET UNLESS APPROVED OTHERWISE BY THE ENGINEER.

14. CLEARING AND GRUBBING SHALL BE RESTRICTED TO PERMANENT EASEMENTS ONLY. CONTRACTOR SHALL LIMIT TREE/BUSH CLEARING IN THE TEMPORARY EASEMENTS, BETWEEN HOUSES AND ALONG PROPERTY LINES TO ONLY ABSOLUTELY NECESSARY FOR CONSTRUCTION.

RELATION OF WATER MAINS TO SEWERS

(A) LATERAL SEPARATION OF SEWERS AND WATER MAINS. WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT LATERAL SEPARATION--IN WHICH CASE:
  (1) THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR
  (2) THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.

(B) CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION--IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

(C) CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

CONSTRUCTION SEQUENCE NOTES

1. PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHTS-OF-WAYS THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (I.E. TELEPHONE, GAS, CABLE, ETC.).

2. THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).

3. ALL SANITARY SEWER & WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE NCDENR-DWQ & NCDENR-PWS. STORM DRAINAGE, STREET CONSTRUCTION AND PAVING SHALL BE IN ACCORDANCE WITH THE N.C.D.O.T.

4. UTILITY SERVICES TO INDIVIDUAL PROPERTIES ARE NOT SHOWN IN THE PROFILES FOR SIMPLICITY OF THE DRAWINGS. SERVICES MAY INCLUDE WATER LATERALS, TELEPHONE, ELECTRIC, CABLE, GAS, ETC.

5. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES AND SIGNS AND/OR UTILITIES IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS DURING THE UTILITY MAIN INSTALLATION AND STREET CONSTRUCTION. (NO SEPARATE PAYMENT).

6. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR UTILITY CROSSINGS AND REPAIR DAMAGES DUE TO CONSTRUCTION TO THE SATISFACTION OF THE UTILITY INVOLVED AT NO ADDITIONAL EXPENSE TO THE OWNER. UNDERGROUND ELECTRICAL CROSSINGS SHALL BE CROSSED IN ACCORDANCE WITH THE NEC AND TECHNICAL SPECIFICATION SECTION UNDERGROUND ELECTRICAL CROSSING

7. WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-IN'S TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.

8. STORM DRAINAGE REPAIRS BY CONTRACTOR DUE TO CONSTRUCTION DAMAGE AND JOINTS EXPOSED DURING CONSTRUCTION SHALL BE INSPECTED BY THE OWNER PRIOR TO BACKFILLING.

9. CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIAL AND PERFORM ALL WORK REQUIRED FOR INSTALLATION OF SEWER LINES, MANHOLES AND APPURTENANCES AS OUTLINED ON DRAWINGS AND ON SPECIFICATIONS, ALL OF WHICH BECOME PART OF THE CONTRACT DOCUMENTS.

10. ALL CONSTRUCTION OF SANITARY SEWER MAINS AND APPURTENANCES IN THE COLLECTION SYSTEMS SHALL BE IN STRICT ACCORDANCE WITH PLANS AND SPECIFICATIONS PREPARED AS PART OF THE CONTRACT DOCUMENTS AND AS APPROVED BY THE BPG, INC. ENGINEER. ALL MATERIALS SHALL BE NEW AND UNUSED. PRIOR TO CONSTRUCTION OF THE APPROVED SANITARY SEWER, CONTRACTOR SHALL PROVIDE FIELD STAKEOUT INCLUDING ADEQUATE LINE AND GRADE STAKES IN ORDER THAT SANITARY SEWER AND APPURTENANCES MAY BE CONSTRUCTED IN ACCORDANCE WITH CONTRACT DRAWINGS.

11. A PRECONSTRUCTION CONFERENCE SHALL BE HELD AT THE COMPLETION OF THE FIELD STAKEOUT WITH THE ENGINEEER AN HIS/HER REPRESENTATIVE, CURRITUCK COUNTY REPRESENTATIVE, NCDENR REPRESENTATIVE, AND ANY REQUISITE UTILITY REPRESENTATIVES THAT WILL REQUIRE COORDINATION WITH DURING THE COURSE OF CONSTRUCTION. A MINIMUM OF 2 DAYS NOTICE SHALL BE GIVEN FOR MEETING REPRESENTATIVES.

12. PREPARE PHOTOGRAPHIC DOCUMENTATION OF PRE-EXISTING CONDITIONS OF THE PROJECTED CONSTRUCTION ROUTE PRIOR TO COMMENCING WORK.

13. IF ANY DEVIATION IS CONTEMPLATED IN LOCATION OR LINE GRADE OF ANY SEWER, STRUCTURE OR APPURTENANCE AS SHOWN ON THE CONTRACT DRAWINGS, A REVISION OF THE DRAWINGS SHOWING THE PROPOSED DEVIATION SHALL BE SUBMITTED TO THE BPG, INC. ENGINEER FOR REVIEW AND APPROVAL BEFORE ANY CHANGES ARE CONSTRUCTED. MINOR FIELD CHANGES MAY BE MADE WITH APPROVAL OF BPG, INC. APPOINTED FIELD INSPECTOR. SHOULD CONTRACTOR DISCOVER AND/OR DAMAGE ANY UNDERGROUND UTILITY FACILITIES, WHICH ARE NOT SHOWN ON DRAWINGS AND/OR MARKED ON THE GROUND, CONTRACTOR SHALL PROMPTLY NOTIFY UTILITY OWNER AND OWNER'S PROJECT REPRESENTATIVE. RELOCATION OF ANY UTILITIES SHALL BE APPROVED AND COORDINATED WITH THE APPROPRIATE UTILITY OWNER.

14. EXCAVATION SHALL CONFORM TO THE LINES AND GRADES SHOWN ON THE PLANS. THE WIDTH OF EXCAVATION FOR TRENCHES SHALL BE A MINIMUM OF 24". EXCAVATION SHALL NOT BE CARRIED BELOW THE ESTABLISHED GRADES AND ANY EXCAVATION BELOW THE REQUIRED LEVEL SHALL BE BACKFILLED WITH SUITABLE, THOROUGHLY COMPACTED GRANULAR BEDDING MATERIAL. CONTRACTOR SHALL INSTALL ALL SHEETING, BRACING, AND SHORING NECESSARY TO PERFORM THE WORK, TO PROTECT EXISTING STRUCTURES AND ALL EXCAVATIONS AS REQUIRED UNDER NORTH CAROLINA OSHA REGULATIONS. COMPLIANCE WITH PROVISIONS OF THE OVERHEAD HIGH VOLTAGE LINE SAFETY ACT IS REQUIRED.

15. DEWATERING EQUIPMENT SHALL BE SIZED TO MAINTAIN THE TRENCH IN A SATISFACTORY DEWATERED CONDITION SUITABLE FOR PIPE LAYING AND BACKFILLING. PIPE LAYING WILL BE PERMITTED ONLY WHERE THE DEPTH OF WATER IS MAINTAINED BELOW THE BEDDING MATERIAL. BEDDING MATERIAL SHALL NOT BE PLACED ON UNSTABLE TRENCH MATERIAL.

16. NOT MORE THAN ONE HUNDRED FIFTY FEET (150') OF TRENCH SHALL BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING. TRENCH WALLS SHALL BE PROTECTED IN ACCORDANCE WITH CURRENT OSHA REGULATIONS. EXCAVATION AT MANHOLES AND SIMILAR STRUCTURES SHALL PROVIDE A MINIMUM CLEARANCE OF EIGHTEEN INCHES (18") BETWEEN THE OUTER SURFACE OF THE STRUCTURE AND THE EMBANKMENT OR SHEETING.

17. WHEREVER FOUNDATION MATERIAL IS UNSUITABLE, IT SHALL BE EXCAVATED UNTIL A STABLE FOUNDATION IS ACHIEVED. GRANULAR MATERIAL, #67 STONE PER ASTM C 12, SHALL THEN BE PLACED IN SIX INCH (6") LAYERS AND COMPACTED UNTIL THE TRENCH BOTTOM HAS BEEN STABILIZED. STANDARD GRANULAR PIPE BEDDING MATERIAL SHALL BE PLACED IN ACCORDANCE WITH ASTM D 2321 FOR PVC PIPE AND ASTM C 12 FOR DIP.

18. ALL GRAVITY SEWER MAINS, SERVICE LATERALS AND FORCE MAINS SHALL HAVE A MINIMUM COVER OF THREE FEET (3') AS MEASURED FROM TOP OF PIPE TO FINISH GRADE. THE BPG, INC. ENGINEER MAY REQUIRE ADDITIONAL COVER AS NEEDED FOR PIPE PROTECTION. SEWERS, WHICH HAVE A DEPTH OF COVER LESS THAN THREE FEET (3'), SHALL BE APPROVED AND INSTALLED AS PER BPG, INC. ENGINEER'S WRITTEN INSTRUCTIONS.

19. PIPE SHALL BE LAID TRUE TO LINE AND GRADE WITH BELLS UPSTREAM AND SHALL BE JOINTED TOGETHER SUCH THAT THE COMPLETED PIPE WILL HAVE A SMOOTH INVERT. PIPE SHALL BE PUSHED HOME BY HAND. THE USE OF EQUIPMENT (I.E. BACKHOE) SHALL NOT BE PERMITTED. CUTTING OF PIPE SHALL BE PERFORMED BY SAWING. STANDARD BEDDING SHALL BE SHAPED TO THE CURVATURE OF BOTH THE BELL AND BARREL OF THE PIPE. THE TRENCH SHALL BE KEPT FREE OF WATER WHILE THE WORK IS IN PROGRESS. THE ENDS OF THE PIPE SHALL BE CLEANED SO THAT PROPER JOINTS CAN BE MADE. AS THE WORK PROGRESSES, THE INTERIOR OF THE PIPE SHALL BE CLEARED OF DIRT, CEMENT, OR OTHER DELETERIOUS MATERIAL.

20. EXCEPT AS REQUIRED FOR USE OF A LASER LEVEL, EXPOSED END OF ALL PIPE AND FITTINGS SHALL BE FULLY CLOSED TO PREVENT EARTH, WATER OR OTHER SUBSTANCES FROM ENTERING PIPE. TRENCH SHALL BE COMPLETELY BACKFILLED AT END OF EACH WORKDAY. WHEN NEW PIPE IS TIED INTO AN EXISTING MANHOLE, NEW PIPE SHALL BE PLUGGED WITH A STANDARD SEWER PLUG AND SHALL REMAIN PLUGGED UNTIL ALL NEW LINE(S) THAT WILL FLOW TO EXISTING MANHOLE HAVE BEEN COMPLETED, TESTED, AND ACCEPTED.

21. BACKFILL SHALL BEGIN AT THE TOP OF THE STANDARD GRANULAR BEDDING AND SHALL BE PLACED IN SIX INCH (6") LAYERS FOR THE INITIAL ONE FOOT OVER THE PIPE AND SHALL BE THOROUGHLY TAMPED TO NINETY-FIVE PERCENT (95%) OF THE MAXIMUM THEORETICAL COMPACTION DENSITY AS DETERMINED BY A STANDARD PROCTOR ON THE MATERIAL. REMAINDER OF THE BACKFILL SHALL BE IN TWO FOOT (2') LAYERS PROPERLY TAMPED.

22. COMPLETION: BEFORE CONNECTING TO AN ACTIVE SYSTEM, THE LEAKAGE TESTS SHALL PROMPTLY FOLLOW INSTALLATION OF WASTEWATER PIPE INCLUDING SERVICES AND KEPT WITHIN A MAXIMUM OF 1000 FEET BEHIND THE WASTEWATER PIPE LAYING OPERATION.

23. CONTRACTOR SHALL FURNISH WEIRS, STAND PIPES, PIPE PLUGS, WATER, PRESSURE GAUGES, STOP WATCHES, AIR COMPRESSOR, VACUUM PUMP, HOSE AND SUCH MATERIALS AND ASSISTANCE AS REQUIRED TO PERFORM THESE TESTS. ALL ACCEPTANCE TESTS SHALL BE CONDUCTED BY CONTRACTOR IN THE PRESENCE OF A BPG, INC. APPOINTED INSPECTOR.

24. ACCEPTANCE TESTS SHALL NOT BE MADE UNTIL SANITARY SEWER, MANHOLES AND PROPOSED SEWER SERVICE CONNECTIONS, AS SHOWN ON THE APPROVED SEWER PLANS, HAVE BEEN INSTALLED, THE SEWER TRENCHES (INCLUDING MANHOLES AND CLEANOUT STACKS) BACKFILLED AND COMPACTED TO FINISHED SUB-GRADE.

25. CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR MAINTAINING SEWER FLOWS DURING PROJECT TO INCLUDE ANY REQUIRED BY-PASS PUMPING OF WASTEWATER BETWEEN MANHOLES DURING INSTALLATION OF SEWER LINES AND/OR MANHOLES. BY-PASS PUMPING SYSTEM SHALL PROVIDE CONTINUOUS FULL CONVEYANCE AND CONTAINMENT OF WASTEWATER PRESENT DURING THE WORK AND SHALL NOT SURCHARGE THE UPSTREAM PUMP STATION BY MORE THAN TWO (2) FEET ABOVE THE NORMAL EFFLUENT LEVELS.

26. ONCE ACCEPTANCE AND START OF THE COLLECTION SYSTEM HAS BEEN RECIEVED, THE CONTRACTOR SHALL PROCEED WITH THE ABANDONMENT PROCEDURES OF THE EXISTING WASTEWATER COLLECTION SYSTEM AS DESCRIBED HEREON.

27. THE NOTES CONTAINED HEREIN ARE INTENDED TO SUPPLEMENT THE TECHNICAL SPECIFICATIONS AND PROVIDE EASY REFERENCE FOR THE CONTRACTOR. IN NO CASE SHALL THESE NOTES VOID ANY PART, SECTION OR REQUIREMENT OUTLINED IN THE TECHNICAL SPECIFICATIONS CONTAINED IN THE CONTRACT DOCUMENTS.

WATER CROSSING SEWER DETAIL

TRENCH DEWATERING DURING SEWER LINE INSTALLATION

1. ALL GROUND WATER WHICH MAY BE FOUND IN THE TRENCHES AND ANY WATER WHICH MAY GET INTO THEM FROM ANY CAUSE WHATSOEVER SHALL BE PUMPED OR BAILED OUT SO THAT THE TRENCH SHALL BE DRY DURING THE PIPE LAYING PERIOD. NO WATER SHALL BE PERMITTED TO REACH CONCRETE UNTIL IT HAS SET SUFFICIENTLY. ALL WATER PUMPED FROM THE TRENCHES SHALL BE DISPOSED OF IN A MANNER SATISFACTORY TO THE OWNER. CONTRACTOR SHALL PROVIDE AT LEAST TWO (2) PUMPS FOR EACH TRENCH OPENED IN WET GROUND AND AT THE SAME TIME, HE SHALL HAVE ONE (1) PUMP IN RESERVE.

2. IF, DURING ANY TIME THAT CONTRACTOR IS PERMITTED TO LAY PIPE IN A TRENCH CONTAINING UNAVOIDABLE TRENCH WATER AND CONSTRUCTION IS INTERRUPTED FOR ANY REASON, THE OPEN ENDS OF PIPE SHALL BE CLOSED BY WATERTIGHT PLUGS OR CAPS, OR OTHER MEANS APPROVED BY THE OWNER. IN ANY CASE, SUCH PROTECTION SHALL BE PROVIDED WHEN WORK IS SUSPENDED OVERNIGHT OR ON WEEKENDS AND HOLIDAYS, REGARDLESS OF THE CONDITION OF THE TRENCH WITH RESPECT TO WATER AT THE TIME THAT THE WORK IS SUSPENDED

.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL STRUCTURES, INCLUDING PIPES AND MANHOLES, AGAINST ANY TENDENCY TO FLOAT UNDER CONDITIONS OF HIGH WATER, WHETHER DUE TO HIGH GROUND WATER OR FLOOD CONDITIONS ON THE PROJECT SITE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE WHATEVER STEPS MAY BE REQUIRED, INCLUDING THE INSTALLATION AND OPERATION OF PUMPS AND PUMPING SYSTEMS, WELL POINTS OR RELIEF DEVICES, TO PREVENT ANY STRUCTURE FROM FLOATING DURING CONSTRUCTION.

4. COST OF THE NECESSARY PUMPS, WELL POINTS OR OTHER APPURTENANCES REQUIRED TO PREVENT FLOTATION SHALL BE INCLUDED IN THE UNIT PRICES BID IN THE PROPOSAL FOR THE VARIOUS BID ITEMS, AND NO EXTRA COMPENSATION SHALL BE ALLOWED FOR SUCH WORK. ANY DAMAGE WHICH MAY OCCUR TO ANY PART OF THE WORK AS THE RESULT OF THE FLOTATION EFFECT OF GROUND OR FLOOD WATERS SHALL BE REPAIRED IN A MANNER FULLY SATISFACTORY TO THE OWNER, AT NO ADDITIONAL COST TO THE OWNER.

5. CONTRACTOR SHALL PROVIDE AND PLACE ALL NECESSARY FLUMES OR OTHER CHANNELS OF ADEQUATE SIZE TO CARRY TEMPORARILY ALL STREAMS, BROOKS, STORMWATER OR OTHER WATER, WHICH MAY FLOW ALONG OR ACROSS THE LINES OF THE PIPE LINE. ALL FLUMES OR CHANNELS THUS UTILIZED SHALL BE TIGHT SO AS TO PREVENT LEAKAGE INTO THE TRENCHES. WATER PUMPED FROM TRENCHES SHALL BE LED TO NATURAL WATERCOURSES. EXISTING SEWERS SHALL NOT BE EMPLOYED AS A DRAIN FOR THE REMOVAL OF DEWATERING WASTES.

SEWER SERVICE LATERAL NOTES

1. CONTRACTOR SHALL MAKE UP STACK AND SUBMIT TO ENGINEER FOR APPROVAL AND SHALL SUBMIT TAPPING SADDLE IF USED TO ENGINEER FOR APPROVAL.
2. HOLE IN SANITARY SEWER MAIN MUST BE CUT WITH SHELL CUTTER. NO HAMMER TAPS ALLOWED.
3. LATERAL SHALL CONFORM TO ASTM SPECS. D-3034 SDR-35 UNLESS OTHERWISE INDICATED AS DUCTILE IRON.
4. ALL PIPE AND FITTINGS SHALL BE 4" OR 6" UNLESS OTHERWISE SPECIFIED.
5. ALL D.I. PIPE SHALL HAVE AN INTERIOR LINING OF CERAMIC EPOXY OR FUSED CALCIUM ALUMINATE CEMENT WITH FUSED CALCIUM ALLUMINATE AGGREGATES. THE ENTIRE D.I. LATERAL SHALL BE COMPRISED OF D.I. PIPE AND MECHANICAL JOINT FITTINGS.
6. ALL CONNECTIONS SHALL HAVE RUBBER GASKET SEALS INSTALLED.
7. THE CONTRACTOR SHALL USE SDR 35 P.V.C. WYE FOR CONNECTION TO SDR 35 P.V.C. PIPE OR DI TEE FOR CONNECTION TO DUCTILE IRON PIPE. PVC WYE SHALL BE ONE PIECE MOLDED OR FABRICATED.
8. INSTALLATION OTHER THAN AS SHOWN MUST BE ENGINEER APPROVED
9. TAPPING PROCESS SHOWN SHALL BE USED FOR ALL SANITARY SEWER MAINS.
10. SLOPE AND DEPTH OF THE SERVICE LATERAL SHALL BE DETERMINED BY THE TOPOGRAPHY OF THE LOT AS APPROVED BY THE ENGINEER OR AS INDICATED ON THE DRAWINGS.
11. SLOPE OF LATERALS SHALL CONFORM TO 1/4" PER FOOT MIN. FOR 4" PIPE AND 1/8" PER FOOT MIN. FOR 6" PIPE. MAXIMUM CLEAN OUT SPACING FOR 4" PIPE IS 75', 100' FOR 6" PIPE
12. ENTIRE SEWER LATERAL ASSEMBLY SHALL BE AIR TESTED CONCURRENTLY WITH SEWER MAIN.
13. INDIVIDUAL LATERALS SHALL BE CLEANED AND FLUSHED PRIOR TO FLUSHING SANITARY SEWER MAINS.
14. LATERAL SHALL NOT BE BACK-FILLED UNTIL INSPECTED BY THE PROJECT ENGINEER OR HIS REPRESENTATIVE.
15. WYE CONNECTIONS SHALL NOT BE USED TO TIE LATERALS INTO A MANHOLE, UNLESS OTHERWISE APPROVED BY ENGINEER.
16. IF BENDS ARE APPROVED BY THE PROJECT ENGINEER, STONE BEDDING IS REQUIRED TO BE INSTALLED FROM UNDISTURBED SOIL TO BOTTOM OF BEND.
17. PVC COMBINATION SHALL BE 2 PIECE TEE-WYE, GASKETED, SDR35, AS MANUFACTURED BY HARCO, GPK OR APPROVED EQUAL.

UTILITY GENERAL NOTES

1. PRIOR TO COMMENCEMENT OF ANY WORK WITHIN EASEMENTS OR RIGHTS-OF-WAYS THE CONTRACTOR IS REQUIRED TO NOTIFY CONCERNED UTILITY COMPANIES IN ACCORDANCE WITH GS 87-102. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. NO SEPARATE PAYMENT. EXISTING UTILITIES SHOWN ARE TAKEN FROM MAPS FURNISHED BY VARIOUS UTILITY COMPANIES AND HAVE NOT BEEN PHYSICALLY LOCATED (i.e. TELEPHONE, GAS, CABLE, ETC.).

2. THE CONTRACTOR SHALL DIG UP EACH UTILITY WHICH MAY CONFLICT WITH CONSTRUCTION 14 DAYS IN ADVANCE TO VERIFY LOCATIONS (HORIZONTALLY AND VERTICALLY) TO ALLOW THE ENGINEER AN OPPORTUNITY TO ADJUST THE DESIGN TO AVOID CONFLICTS (NO SEPARATE PAYMENT).

3. ALL SANITARY SEWER & WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE NCDENR-DWQ & NCDENR-PWS. STORM DRAINAGE, STREET CONSTRUCTION AND PAVING SHALL BE IN ACCORDANCE WITH THE N.C.D.O.T.

4. UTILITY SERVICES TO INDIVIDUAL PROPERTIES ARE NOT SHOWN IN THE PROFILES FOR SIMPLICITY OF THE DRAWINGS. SERVICES MAY INCLUDE WATER LATERALS, TELEPHONE, ELECTRIC, CABLE, GAS, ETC.

5. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND BE RESPONSIBLE FOR TEMPORARY RELOCATION AND/OR SECURING EXISTING UTILITY POLES AND SIGNS AND/OR UTILITIES IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS DURING THE UTILITY MAIN INSTALLATION AND STREET CONSTRUCTION. (NO SEPARATE PAYMENT).

6. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORTS FOR UTILITY CROSSINGS AND REPAIR DAMAGES DUE TO CONSTRUCTION TO THE SATISFACTION OF THE UTILITY INVOLVED AT NO ADDITIONAL EXPENSE TO THE OWNER. UNDERGROUND ELECTRICAL CROSSINGS SHALL BE CROSSED IN ACCORDANCE WITH THE NEC AND TECHNICAL SPECIFICATION SECTION UNDERGROUND ELECTRICAL CROSSING

7. WHERE DEEMED NECESSARY BY THE ENGINEER THAT A SUBSURFACE DRAINAGE SYSTEM IS REQUIRED, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, LABOR, EQUIPMENT, TIE-IN'S TO EXISTING DRAINAGE STRUCTURES AND ALL OTHER INCIDENTALS NECESSARY TO PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH CITY OF FAYETTEVILLE STANDARDS. IMPROPERLY INSTALLED AND NON-FUNCTIONING DRAINAGE SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING FRENCH DRAINAGE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AND OR REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.

8. ANY DRIVEWAY CULVERTS DAMAGED DURING CONSTRUCTION SHALL BE EITHER REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE. FILTER FABRIC CLOTH SHALL BE PLACED OVER EITHER CULVERT ENDS DURING THE COURSE OF CONSTRUCTION. ALL EX. DRAINAGE INFRASTRUCTURE WILL BE RETURNED TO PRE-EXISTING CONDITIONS PRIOR TO FINAL PROJECT APPROVALS.

GENERAL NOTES SANITARY SEWER UTILITY

1. CLEANOUT ELEVATIONS AND/OR LOCATIONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER WHEN NECESSARY. CLEANOUT STACK TOP ELEVATION IS DETERMINED BY INTERPOLATING FIELD DATA AND MAY NOT BE EXACT. CLEANOUT ELEVATION TOP SHALL BE SET IN ACCORDANCE WITH THE TYPICAL DETAIL DESCRIBED HEREON. (NO SEPARATE PAYMENT).

2. WHERE SANITARY SEWER MAINS ARE TO BE CONSTRUCTED WITHIN 20' OF EXISTING RESIDENCES SPECIAL CONSIDERATION SHALL BE GIVEN TO MINIMIZE UNDERMINING OR OTHERWISE DISTURBING EXISTING RESIDENCES ADJACENT TO THE SEWER MAIN. THE CONTRACTOR SHALL USE A RUBBER TIRED BACK HOE AND NO MECHANICAL COMPACTION EQUIPMENT IN THESE AREAS. THE TRENCH SHALL BE SHORED ADEQUATELY TO PREVENT ANY SLOTHING OF THE SIDE SLOPES. SUITABLE BACK FILL SHALL BE PLACED IN THE TRENCH. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR REPAIR OF STRUCTURES, FOUNDATIONS, FOOTINGS, ETC. DAMAGED DUE TO CONSTRUCTION.

3. SANITARY SEWER MANHOLE DEFLECTION ANGLE'S ARE 180 DEGREES UNLESS NOTED OTHERWISE. ALL INVERT ELEVATIONS ARE SHOWN TO THE MANHOLE CENTERLINE.

SEWER SERVICE CLEANOUT

NOT TO SCALE (FOR TRAFFIC AREAS)

SEWER SERVICE CLEANOUT

NOT TO SCALE (FOR NON–TRAFFIC AREAS)

SERVICE PLUG/ C/O CAP ASSEMBLY

NOT TO SCALE

SEE CLEANOUT COVER ASSEMBLY DETAIL FOR USE IN TRAFFIC AREAS

TAPPING SADDLE (OPTIONAL)

NOTE: TAP SHALL BE 4 1/2" FOR 4" LATERAL, AND SHALL BE 6 1/2" FOR 6" LATERAL.

CLEANOUT COVER ASSEMBLY

NOT TO SCALE (FOR TRAFFIC AREAS)

4"Ø LATERAL SEWER SERVICE CONNECTION DETAIL

NOT TO SCALE LOCATIONS AS NOTED

1. ALL VERTICAL AND HORIZONTAL SEPARATION SHALL BE IN ACCORDANCE WITH STATE REGULATIONS.
2. THE SKETCHES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY.
3. THE CONTRACTOR SHALL BE REQUIRED TO VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY AT EACH CROSSING PRIOR TO CONSTRUCTION OF LATERAL TO INSURE PROPER CLEARANCES ARE MAINTAINED.
4. ALL PIPE BEND LOCATIONS AND MAX. NUMBER OF BENDS INSTALLED ON LATERALS SHALL BE APPROVED BY THE PROJECT COORDINATOR PRIOR TO INSTALLATION OF BEND OR EXTENDING THE LATERAL FROM THE MAIN.
5. ALL REQUIREMENTS FOR SEWER LATERAL NOTES AND DETAILS SHALL BE APPLICABLE.
6. REFER TO UNDERGROUND ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION WHEN CROSSING UNDERGROUND ELECTRICAL FACILITIES.

SEWER SERVICE LATERAL UTILITY CONFLICT SEPARATION REQUIREMENTS

NOT TO SCALE

Bissell Professional Group
Firm License # C-956
3512 North Croatan Highway
P.O. Box 1068
Kitty Hawk, North Carolina 27949
(252) 261-3266
FAX (252) 261-1760

BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION
TYP. CONSTRUCTION DETAILS

PROJECT:
FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA
CONSTRUCTION DRAWINGS

REVISIONS

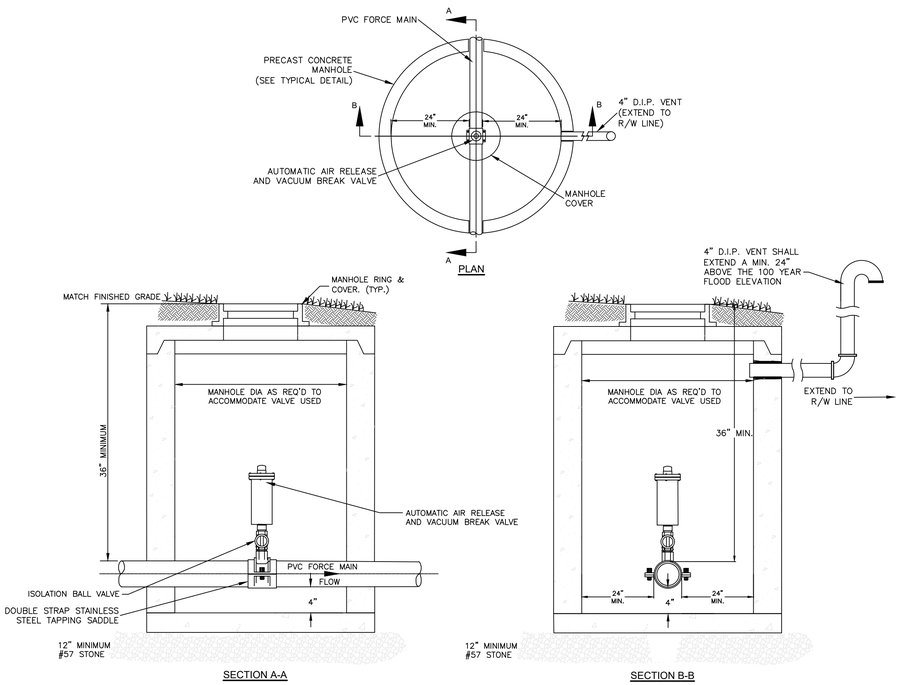
NO.	DATE	DESCRIPTION	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

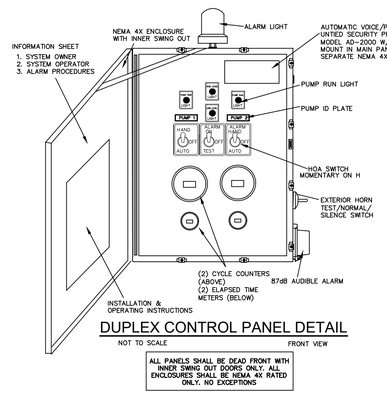
DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 48 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

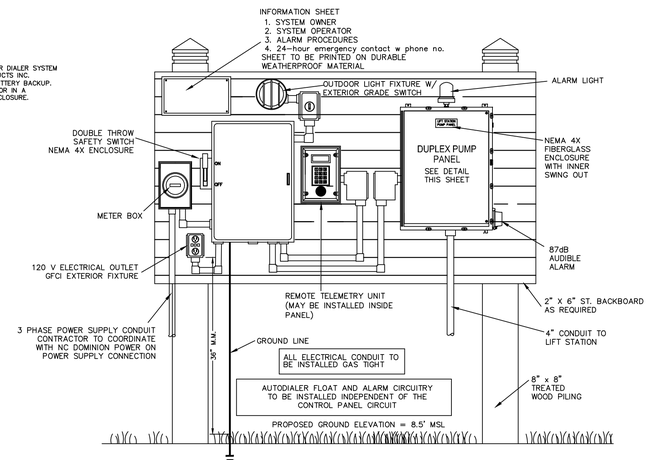
S:\projects\4680 Flora Tract (Fost II)\dwg\Construction Drawings\468000B1.dwg 9/26/2024 Plotted: 9/26/2024 10:56 AM DWF6 ePlot.pc3



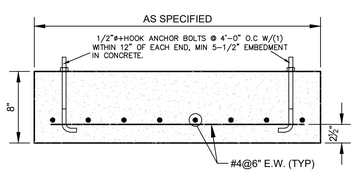
FORCE MAIN AIR RELEASE VALVE & VAULT DETAIL
NOT TO SCALE



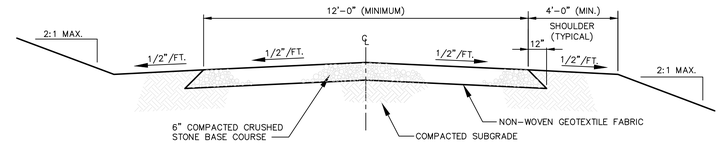
DUPLEX CONTROL PANEL DETAIL
NOT TO SCALE



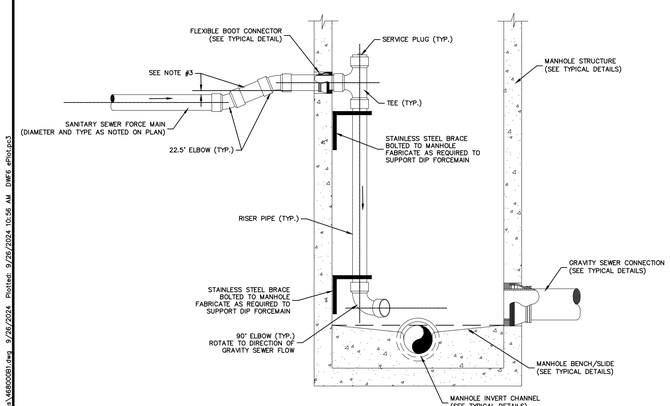
LIFT STATION CONTROL PANEL
NOT TO SCALE



STANDBY PUMP PAD DETAIL
NOT TO SCALE

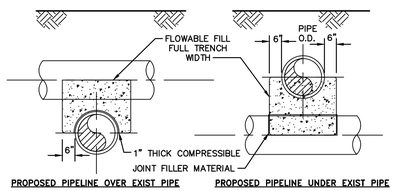


PUMP STATION ACCESS ROAD
NOT TO SCALE



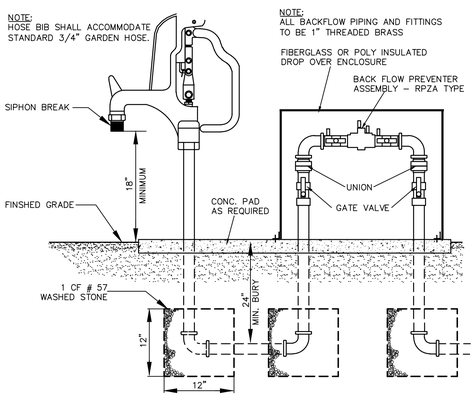
TYPICAL MANHOLE W/ FORCE MAIN CONNECTION DETAIL
NOT TO SCALE

NOTES
1. PIPE AND FITTINGS SHALL EQUAL SIZE AND TYPE OF FORCE MAIN
2. MANHOLE SHALL BE IDENTICAL TO STANDARD MANHOLE SPECIFICATIONS.
3. THE INLET PIPE INVERT SHALL BE EQUAL TO OR HIGHER IN ELEVATION THAN THE TOP OF THE FORCE MAIN PRIOR TO THE FIRST 22.5° ELBOW. THE LENGTH OF PIPE BETWEEN ELBOWS SHALL BE DETERMINED AS NECESSARY TO ACHIEVE THE CONDITION DESCRIBED ABOVE.

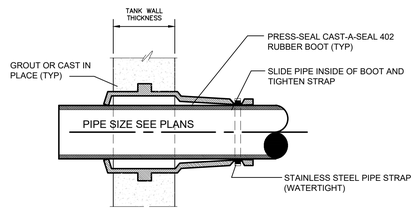


CONCRETE CRADLE DETAIL
NOT TO SCALE

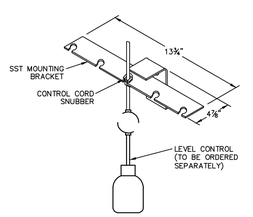
1. BRING GRADE TO SPRING LINE FOR PIPE
2. EXCAVATE TRENCH AS SHOWN AND PLACE PIPE ON SUPPORTS
3. FILL TO SPRINGLINE WITH CONCRETE
4. WRAP PIPE JOINTS WITH A NONWOVEN GEOTEXTILE
5. CONCRETE CRADLE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
6. THE CONCRETE FOR THE CRADLE SHALL BE CONSOLIDATED PRIMARILY BY INTERNAL VIBRATION, AND SHALL BE FINISHED "ROUGH" SO AS TO ACHIEVE A MORE ADEQUATE BOND BETWEEN THE CONCRETE IN THE CRADLE AND THE FIRST LIFT OF STRUCTURAL FILL.



FROST-PROOF YARD HYDRANT DETAIL
NOT TO SCALE



GASKETED FLEXIBLE WATERTIGHT CONNECTION DETAIL
NOT TO SCALE



FLOAT BRACKET DETAIL FOR SUBMERSIBLE LIFT STATION
NOT TO SCALE MYERS CSB5-SS

Bissell Professional Group
Engineering & Surveying
3512 North Croatan Highway
Kitty Hawk, North Carolina 27949
PHONE (252) 261-3300
FAX (252) 261-1760
BISSELL PROFESSIONAL GROUP
Engineers, Planners, Surveyors and Environmental Specialists

WASTEWATER COLLECTION
TYP. CONSTRUCTION DETAILS

PROJECT: FLORA FARM PHASES 1 - 2
MOYOCK CURRITUCK COUNTY NORTH CAROLINA

CONSTRUCTION DRAWINGS

REVISIONS

NO.	DATE	DESCRIPTION	BY

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

DATE: 4/10/24	SCALE: AS NOTED
DESIGNED: BPG	CHECKED: MSB
DRAWN: DMK	APPROVED: MSB

SHEET: 49 OF 49
CAD FILE: 468000B1
PROJECT NO: 4680

S:\projects\4680 Flora Tract (Fast 1)\Dwg\Construction Drawings\4680098.dwg 9/29/2024 Posted: 9/29/2024 10:56 AM DWG ePlot.pc3